DWR

FALL 2013

a magazine from the
California Department of
Water Resources

Moving Water

who gets it and how it gets to you

Page 6

Meeting Expectations

Each day, we arrive at work with basic expectations in order to do our jobs: that we have necessary supplies, tools and equipment, that our computers are working, that we can secure personnel and services, that we have funds to pay our bills and that we will receive paychecks on payday. These expectations are met, largely due to the work of DWR's Business Operations team. Formally comprised of the Division of Fiscal Services, the Division of Technology Services, the Business Services Office, the Human Resources Office and the Capital Outlay and Sustainable Business Practices Office,"Bus Ops" staff is instrumental in keeping the Department's administrative activities running smoothly, while ensuring compliance with State laws, regulations and Departmental policies and procedures. Bus Ops staff often work outside of the public spotlight to resolve complex governmental challenges in support of the Department's multiple missions.

While providing operational support to the line programs is a critical function, Bus Ops organizations also advance the Department's strategic goals through their own initiatives. Working on the premise of *reduce, reuse, recycle,* the Business Services Office promotes *sustainability* by stocking environmentally-preferred and recycled-content products whenever possible. Last year, the Green Pasture Office Supply Reuse Room was created so that surplus and gently-used office supplies could be reused instead of being thrown away. All Bus Ops organizations are active participants in DWR's *safety* system. A variety of essential safety equipment is kept in stock as a preventive measure. The Division of Fiscal Services created an eye-catching Safety Board as a way to communicate important messages and promote a safe work environment. The goal to provide *cost-effective and timely services* is another common driver throughout Bus Ops. The Division of Technology Services is leading an effort to improve business processes by making use of new functionality within SAP. With regard to *succession planning,* Human Resources Office managers actively participate in the California Energy and Utilities Workforce Consortium as a way to generate public interest around careers in the energy and utilities industry.

These are only a few examples of the many ongoing efforts of the Bus Ops team in support of DWR and its programs.

I want to take this opportunty to thank the dedicated Business Operations staff and our administrative partners throughout DWR for your valued contributions. You ensure that critical operational expectations are met in achieving our mission for the State of California.

Kathie Kishaba, *Deputy Director*
California Department of Water Resources

Business Operations Facts

$51,300,829
The net present value saved by Fiscal Services staff in Fiscal Year 2012-13 by refinancing SWP revenue bonds.

20
Training classes conducted by the Procurement and Contracting Office FY 2012-13 alone.

4
California State Government Tier III data centers, one of which is managed by the Division of Technology Services.

2,000
Material items that have been re-used in the past six months as a result of more than 250 visits to the DWR Green Pasture Room.

$5.7 (In millions)
The approximate savings generated by the Facilities Management Office by reusing hundreds of lightly-used cubes of modular furniture from another State Department.

What's INSIDE

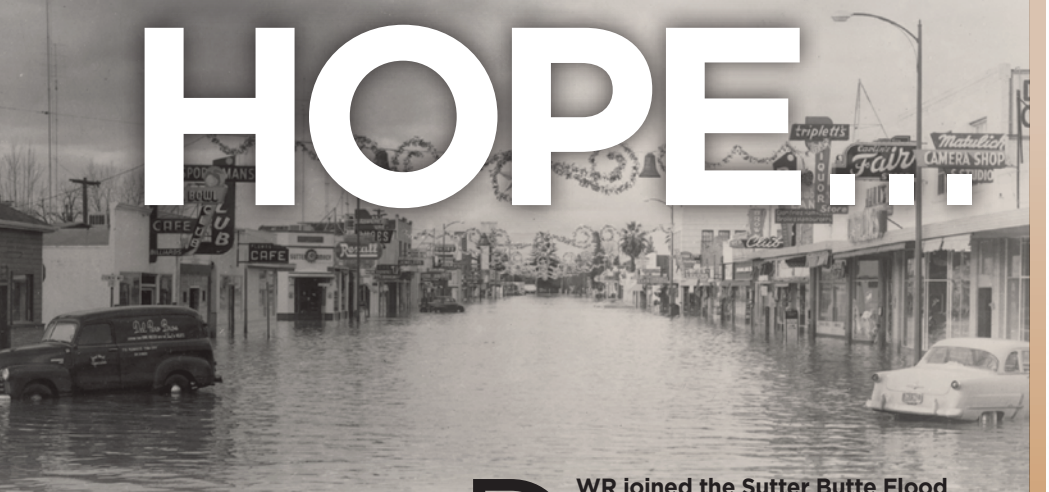
Where is it going . . . find out on page 6

On the Cover:
Approximately 2,700 gallons per minute of groundwater discharging from a production well into a nearby agricultural canal.

(Left to Right) During a groundwater substitution transfer project site visit, North Central Region Office's Engineering Geologist Tad Bedegrew and Senior Engineering Geologist Chris Bonds measure and record a pumping water level in a production well.

YESTERDAY . . .

HOPE...



DWR joined the Sutter Butte Flood Control Agency (SBFCA) in August to break ground for levee repair construction along the Feather River west bank in the Sutter Basin. Construction commenced at Shanghai Bend, just upriver from the site of the historic 1955 Christmas Eve levee failure that killed 38 people.

DWR, through its Early Implementation Program, is providing bond funds for 75 percent of costs for the first phase of repairs to 44 miles of levees protecting Yuba City, Live Oak and Sutter County. DWR Deputy Director Gary Bardini, referring to Governor Brown's stated goal for his administration, told the crowd that commencement of the project is an example of "getting stuff done."

(continues on page 5)

The 1955 flooding at Yuba City and Nicolaus resulted in 23,000 home evacuations and 5,745 homes damaged. The Fifth Street Bridge across the Feather River washed out due to flooding.

DWR magazine

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Secretary for Natural Resources

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TODAY . . .

. . . for the Feather River

Groundbreaking marks start of levee repairs

(continued from page 4)

The initial project is a part of SBFCA's larger $312 million program to make repairs from Thermalito Afterbay south to the Sutter Bypass. Levees along the west bank of the Feather River do not provide 100-year flood protection (protection against a flood that has a one percent chance of occurring in any given year), because they suffer from potential under-seepage and through-seepage. Similar problems caused the major levee failures in Yuba City in 1955, and again in Yuba County in 1986 and 1997.

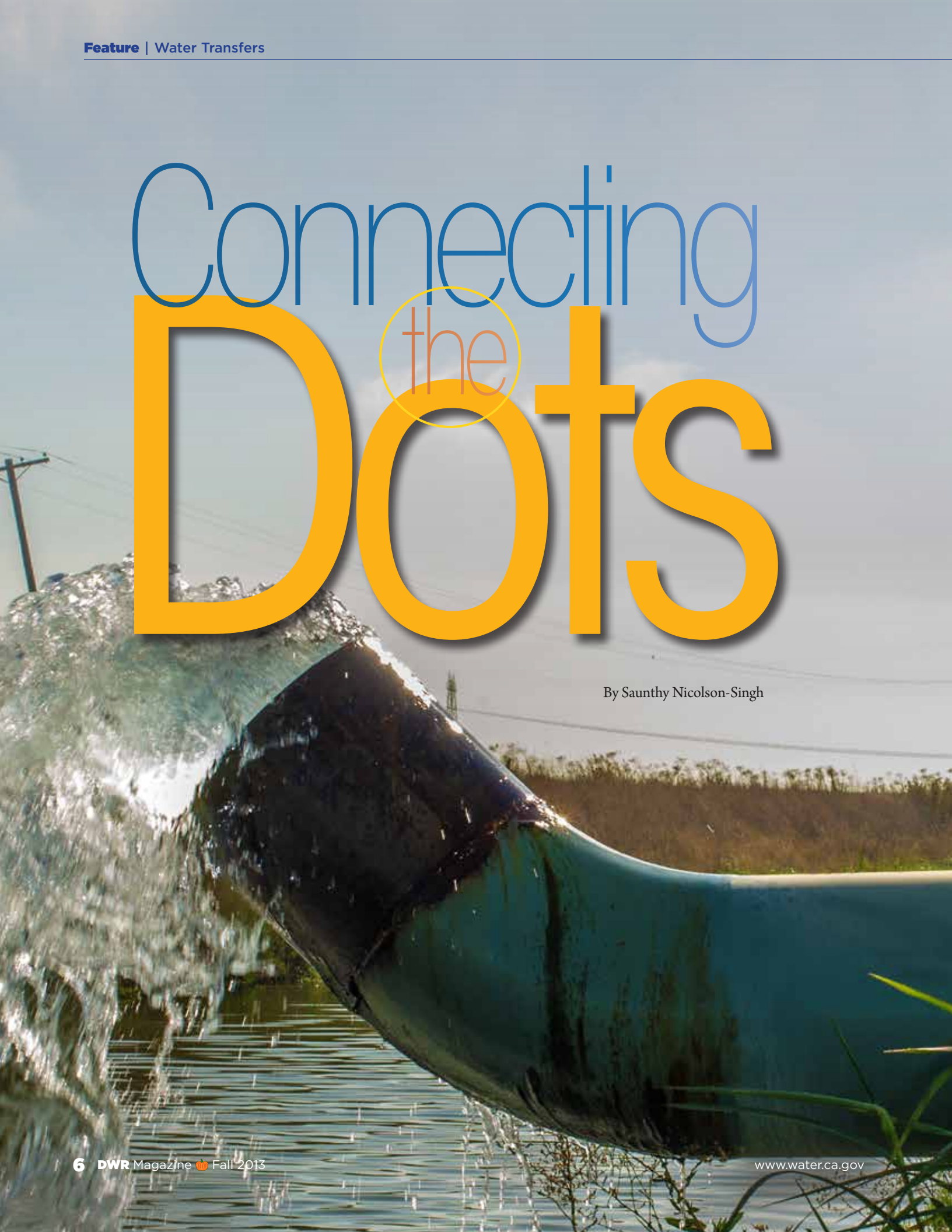
The groundbreaking ceremony featured the comments from Bardini, along with those from Congressmen John Garamendi and Doug LaMalfa, State Senator Jim Nielsen, Central Valley Flood Protection Board President Bill Edgar and SBFCA Executive Director Mike Inamine. Inamine joined SBFCA in 2011 after providing key leadership for DWR in the Flood Management and Engineering Divisions, including a stint as Chief of the Levee Repairs and Floodplain Management Office. As part of the FloodSAFE Executive Leadership Team and Levees Manager, Inamine managed the State's Critical Levee Repairs Program which remediated hundreds of critically damaged Central Valley levees.

DWR Deputy Director Gary Bardini (left) *with Sutter Butte Flood Control Agency staff and elected officials during groundbreaking ceremony on August 7, 2013 for levee repair project on the Feather River in Yuba City.*

California Department of Wate Resources

Connecting the Dots

By Saunthy Nicolson-Singh



Even though last fall was wetter than average, January through May 2013 turned out to be the driest in the past 90 years, with a Sierra snowpack that measured only 17 percent of normal.

The State Water Project (SWP) was able to allocate only 35 percent of the requested water in 2013. The federal Central Valley Project (CVP) allocated a scant 20 percent of contract supplies to many south-of-Delta agricultural contractors. This dry year prompted Governor Edmund G. Brown, Jr., to sign Executive Order B-21-13 in May, directing DWR and the State Water Resources Control Board to expedite water transfers requiring their approval.

Water transfers play a crucial role in dry years, helping to fill shortages in local water supplies. Since 1991, DWR has approved hundreds of water transfers that allowed willing Northern California farmers and water districts to transfer water through SWP facilities to areas with water supply shortages.

"DWR's criteria for water transfer proposals has changed significantly since 1991 as we learn more about water transfers from our experience from previous years," said Maureen Sergent, Senior Engineer with the State Water Project Analysis Office (SWPAO) who has reviewed water transfer proposals since the 1991 Drought Water Bank.

Agencies wanting to move transfer water through SWP facilities submit proposals to DWR for review and approval. The majority of these proposals involve the short term transfer of water, up to one year, from north of the Delta to areas within the San Joaquin Valley, San Francisco Bay Area or Southern California. Some sellers agree to idle farm acreage and thereby not divert a portion of their surface water onto their fields, while others substitute groundwater for surface water they would otherwise divert. Other sellers agree to re-regulate their storage reservoirs to provide stored surface water for transfer.

"DWR in coordination with the U.S. Bureau of Reclamation (Reclamation) is committed to water transfers as a mechanism to assure continued flexibility in

(Above) *North Central Region Office's Senior Engineering Geologist Chris Bonds monitors production well flow rates during a visit to one of the 2013 groundwater substitution transfer projects.*

(Left to Right) *Butte Water District Board Director Charles Etcheverry meets DWR Senior Engineer Maureen Sergent, Senior Engineering Geologist Kelly Staton and Supervising Engineer Nancy Quan at groundwater pumping site used for 2013 water transfer.*

> From 2000 to 2013,
> DWR has facilitated more than
> **1,000,000 acre-feet**
> of water transfers.
>
> —**Nancy Quan,** *State Water Project Analysis Office*

water management operations in support of a safe, reliable and sustainable water supply for all Californians," said Tom Filler, DWR's Water Transfers Program Manager in the Division of Integrated Regional Water Management (IRWM). "Although the need for water transfers varies from year to year, external factors including climate change and other challenges facing the Delta may influence the frequency of need for water transfers to meet local water demands."

The Team

DWR's SWPAO coordinates the review of water transfer proposals with the Divisions of IRWM and Operations and Maintenance (O&M).

Filler and IRWM staff work with Supervising Engineer Nancy Quan and staff from SWPAO, Northern and North Central Regions and Reclamation to develop a draft "Technical Information for Preparing Water Transfer Proposals." The annual document details criteria that sellers must meet to transfer water if conveyance through SWP or CVP facilities is required. To help sellers and buyers prepare water transfer proposals for DWR's or Reclamation's review, information is available at **http://www.water.ca.gov/watertransfers/docs/TechInfoDoc-WaterTransfers-2013.pdf**

SWPAO reviews the transfer proposals to make a "real water" determination and confirms that the transfers are not harming other legal users of water, the environment or the economy of the area from which the water is being transferred. When all the supporting documents are gathered, reviewed and approved, a conveyance agreement is developed. Many transfers also must be approved by the State Water Resources Control Board.

"We don't get transfers every year, but this year we received 20 requests for conveyance through SWP facilities from both SWP and CVP water agencies," said Quan. "Most of the transfers this year were for groundwater substitution, the biggest with Yuba County Water Agency (YCWA) for 64,730 acre-feet. The smallest request was for 1,110 acre-feet of groundwater substitution water from the Eastside Mutual Water Company along the Sacramento River, which went to the San Luis and Delta-Mendota Water Authority."

Because there are losses associated with moving the water through the Delta, the buyers do not get all of the water the sellers make available. The "carriage water" loss, which varies each year, is estimated at 30 percent for this year. Therefore, a buyer who purchases 100 acre-feet of transfer water north of the Delta will only be credited with 70 acre-feet at the Delta export

Water Transfer Principles

Water transfers follow these three fundamental water code rules:

1. Avoid injury to other legal users of water
2. Avoid unreasonable effects to fish, wildlife or other in-stream beneficial uses of water
3. Avoid unreasonable effects on the overall economy or the environment in the counties from which the water is transferred.

DWR's water transfers website:
www.water.ca.gov/watertransfers

(Left to Right) *Kelly Stanton and Tito Cervantes of the Northern Region Office monitor a water transfer project in Sutter County.*

pumps because the "lost" water is required to maintain Delta water quality standards.

"There's also a loss associated with groundwater substitution transfers due to the interaction of surface streams with the groundwater basin," said Quan. "Over 300,000 acre-feet of transfer water has been purchased this summer for export at the Banks Pumping Plant during the July through September water transfer window."

Field Inspections

DWR's regional office staff confirms proposal submissions. Crop idling transfers in Northern California are reviewed and verified by Tito Cervantes, Senior Land and Water Use Scientist in IRWM's Northern Region Office in Red Bluff. Cervantes confirms water district compliance and conducts visual checks during the transfer period to make sure the fields remain idle and the conveyance contract requirements are being met. From the North Central Region (NCR) Office, Senior Land and Water Use Scientist Kim Rosmaier and her staff review and verify crop idling transfers in the NCR area.

Chris Bonds, IRWM Senior Engineering Geologist of the NCR Office, and his staff provide technical assistance to SWPAO, review transfer proposals for groundwater substitution projects and conduct well site visits in the NCR. They evaluate transfer well construction, check the well to surface water distance, confirm proper installation and calibration of well flow meters, and ensure that adequate groundwater level and quality monitoring programs are set up for each project. Groundwater levels and quality are monitored regularly for each transfer and monitoring reports must be submitted to DWR monthly through May of 2014. From the Northern Region Office, Kelly Staton, Senior Engineering Geologist, and her staff evaluate groundwater substitution transfer projects in the Northern Sacramento Valley.

The Transfer

"This year, we have nine groundwater substitution projects in the North Central Region and five in the Northern Region for a gross transfer amount of about 67,000 acre-feet not including the YCWA transfer," said Bonds. "The largest non-YCWA groundwater substitution transfer this year is from Cordua Irrigation District at 8,270 acre-feet."

Buyers and sellers negotiate a price for transfer water each year based on a number of factors, including crop prices for crop-idling transfers, hydrologic conditions and the availability of other water supplies.

Since 2004, Curtis Spencer, a Principal Engineer now working as a Retired Annuitant in SWPAO, has worked on the Yuba Accord water transfer program, an 18-year agreement between DWR, YCWA and 22 SWP and CVP contractors. The YCWA provides transferable surface releases from its New Bullards Bar Reservoir as well as groundwater substitution transfer water.

Tom Filler of the Division of Integrated Regional Water Management leads DWR's Water Transfers Program efforts.

"Instead of taking normal supply from the Yuba River, the farmer there uses groundwater and lets the surface water go downstream to 21 of our SWP contractors and the San Luis and Delta-Mendota Water Authority," said Spencer. "The Yuba Accord's been very successful, moving more than 867,000 acre-feet of transfer water, including this year's transfer of more than 170,000 acre-feet of surface and groundwater substitution water."

After the transfer proposals are reviewed by DWR staff in SWPAO, Regional Offices, O&M and Executive, Water Management Branch Chief Tracy Pettit and her staff in O&M's Operations Control Office coordinate the scheduling and conveyance of the transfer water through SWP facilities.

"SWP water has a higher priority than third party water," said Pettit. "Therefore, we move SWP water first. So, for example, we are permitted through the U.S. Army Corps of Engineers (USACE) to divert at Clifton Court a three-day average of 6,680 cubic feet per second (cfs). If we're only moving 5,000 cfs of SWP water, and if Delta conditions allow the diversion to 6,680 cfs, then we have additional capacity to move 1,680 cfs of third party water. Transfer water is considered third party water."

Pettit works closely with Andy Chu, Chief of the Export Management Section of her staff, to schedule the transfer water in real time.

"Transfer water doesn't get stored in our facilities," said Pettit. "In 2012, however, water purchased from the Feather River Service Area (or SWP settlement contractors) remained in Oroville due to units being out of service at the Hyatt Powerplant. The SWP was unable to release this water that summer. Fortunately, since Lake Oroville never went into flood control operations, this water remained in Lake Oroville through the spring and is now being moved during the transfer window. Had Lake Oroville gone into flood control operations, then this transfer water would be the first to go. This water is always on top of project water and has a lower priority."

After water goes through Banks Pumping Plant, all deliveries from the SWP to water agencies, including transfer water, are tracked by SWPAO.

Filler, Quan and Pettit agree water transfers can be risky, with no guarantee of delivery to a buyer. However, Quan adds, "This is a good water management tool and may be used more in coming years."

Located by the Sutter Buttes, a rice field near Snake River in Live Oak is fallowed in 2013.

The Uncertainty of Drought Prediction

By Jeanine Jones

Data source: The NOAA Climate Prediction Center.

Will water year 2014 be dry? This question is especially relevant following a dry 2012 and 2013. With reservoir storage having been depleted by this year's dry conditions, a third dry year would likely result in sufficient impacts to merit being called a drought. Unfortunately, our ability to predict droughts is limited.

Drought prediction is a complex scientific problem for the research community. Drought prediction at useful time periods—during the winter wet season, at the beginning of the water year, or out to the next water year—is formally known as intraseasonal to interannual (ISI) climate forecasting.

ISI forecasting falls in between National Weather Service operational weather forecasts (out to about 10 days) and decadal to century-scale climate modeling performed by academic researchers. The primary source for ISI forecasts is presently the National Oceanic and Atmospheric Administration's (NOAA) Climate Prediction Center (CPC), which produces outlooks (figure above) for temperature and precipitation. CPC's outlooks make a forecast only for geographic areas where CPC believes predictability may exist, based on factors shown in the sidebar. There is often no forecast made for large areas of the United States. Where forecasts can be made, their skill remains limited,discouraging their use for water management decision-making.

Conventional wisdom is that ISI forecasting will remain a challenging topic, and that progress will be made slowly and incrementally through use of a range of approaches; there is no silver bullet. DWR has convened multiple workshops with the science community in the past few years, seeking near-term opportunities for making incremental improvements. Examples of potentially promising topics identified include:

- Developing statistical seasonal forecasting models using climate model reanalysis data sets to provide a longer period of record for analysis;
- Developing capacity to predict conditions favorable for the large atmospheric river storms that bias a water year towards the wet side (because the storms' absence offers drought predictive capability);
- Developing an analog years database to link historically observed weather with climate patterns such as the El Niño—Southern Oscillation (ENSO) or Pacific Decadal Oscillation;
- Improving characterization of atmospheric patterns that historically created prolonged dry conditions and understanding their predictability.

DWR annually holds a November Winter Outlook Workshop with the Scripps Institution of Oceanography to develop a research-level experimental seasonal forecast for the water year. The workshop's purpose is twofold: to produce the experimental forecast and to explore opportunities to improve forecasting methods.

A summary of the experimental forecast will be provided in early December on DWR's Drought website at **http://www.water.ca.gov/**

NOAA's Climate Prediction Center's Outlook Sources

The Climate Prediction Center (CPC) began issuing its long-lead seasonal temperature and precipitation outlooks in the mid-1990s. The main factors that influence its outlooks are:

- ENSO (the source of most of the forecasting skill)
- Recent temperature and precipitation trends
- Madden-Julian Oscillation
- North Atlantic Oscillation
- Pacific Decadal Oscillation
- Soil moisture and snow cove anomalies
- Statistical forecast tools
- Dynamical forecast models
- Consolidation of trends and forecasts

Shaking it up

Tracking Earthquakes Near the State Water Project Facilities

(Above) *DWR Precision Electronics Specialists David Pfluger* (right) *and Jorge Gomez prepare to install new digital seismic recorder at Oroville Dam Station 46.*

(Below) *Chief Jim Agnew* (left) *and David Parke of the DWR's Earthquake Engineering Section review seismic recordings.*

California averages 500 small earthquakes each week along more than 100 active faults. DWR staff from the Division of Operations and Maintenance's Earthquake Engineering Section perform the vital role of around–the-clock monitoring of quakes near California's waterways.

The Earthquake Engineering team constantly gathers data and supplies DWR experts with details on earthquakes near State Water Project (SWP) and other DWR facilities. Since installing its first seismic stations 50 years ago, DWR has recorded 6,360 earthquakes of magnitude 3.7 or greater.

Five Decades of History

DWR's first seismic station, located near Oroville Dam, will turn 50 on December 5 and continues to provide accurate earthquake data. The Earthquake Engineering Section's network of monitoring stations has grown from that first Oroville location to 129 stations, with plans to install more instruments in the future.

The unit's sensors record even the faintest shudders, and when a magnitude 3.7 or greater temblor strikes, David Parke of the Earthquake Engineering Team reports it to the Project Operations Center (POC) in Sacramento. The POC then notifies DWR staff at facilities that might have been affected, and crews are dispatched to perform detailed inspections for structural damage.

Jim Agnew, Chief of DWR's Earthquake Engineering Section, said California's earthquake activity has been a DWR concern for decades.

"It was known well before the start of the State Water Project that the state was more seismically active than the rest of the country and that the California Aqueduct would need to extend through some of the most seismically active portions of the state, crossing the San Andreas fault in several locations," said Agnew. "A seismic review board was set up that included prominent California seismologists of the time, such as Beno Gutenberg of the California Institute of Technology (Caltech) and Bruce Bolt of the University of California at Berkeley. Legislation was

(Left to right) *Andrew Cowell, Lead Precision Electronics Specialist, checks for damages to memory card of digital recorder. Jorge Gomez tests equipment for digital recorder installation at Oroville Dam. David Pfluger checks seismic sensor at Oroville station.*

passed around 1962 requiring DWR to install and maintain seismic monitoring equipment on the State Water Project."

According to Agnew, the Earthquake Engineering Section first tried several methods of data collection in the very early 1960s. Methods included first-order leveling lines (surveys of the ground on either side of the fault), long-baseline fluid tilt meters (fluid-filled pipes terminated by two reservoirs which measure the earth's surface tilt) and seismoscopes (a needle scratches the earthquake motion onto curved, smoked-glass plates).

Earthquake Engineering began installing seismometers and accelerometers in late 1963, and sent the data to the University of California Berkeley Seismic Lab for analysis. From mid-1968 to 1991, the section staff analyzed the collected seismic data directly through analog recording devices, such as Helicorders and Develocorders. Since 1991, the seismic network data slowly has been converted to digital format, and data is still analyzed in-house.

"Today, most of the incoming seismic data now streams in digital format into a computer program called Earthworm, which listens for typical earthquake signals and saves the earthquake data as recorded by all our field sites, for further analysis," said David Parke, an Associate Seismologist who maintains the Earthworm system and also notifies the POC of all quakes of magnitude 3.7 or greater.

Quake Detectives

Nestled on the second floor of the Natural Resources Building in Sacramento, the seven-person Earthquake Engineering team operates as DWR's earthquake detectives.

DWR's three Precision Electronics Specialists (PES)—Andrew Cowell, Jorge Gomez and David Pfluger—perform all field instrument installations, maintenance and repairs. From the Upper Feather River Lakes in Northern California to Lake Perris in Southern California, the PES crew works with private landowners, DWR field division staff and other State agencies to inspect and keep the seismic network running smoothly.

"Without the PES crew keeping track of the equipment and making timely repairs, the Earthquake Engineering Section's seismic network would quickly be dead in the water," said Agnew.

An Expanding Network

The Earthquake Engineering Section plans to expand the current network. The expansion of the seismic network will provide more information in a shorter time to a larger audience.

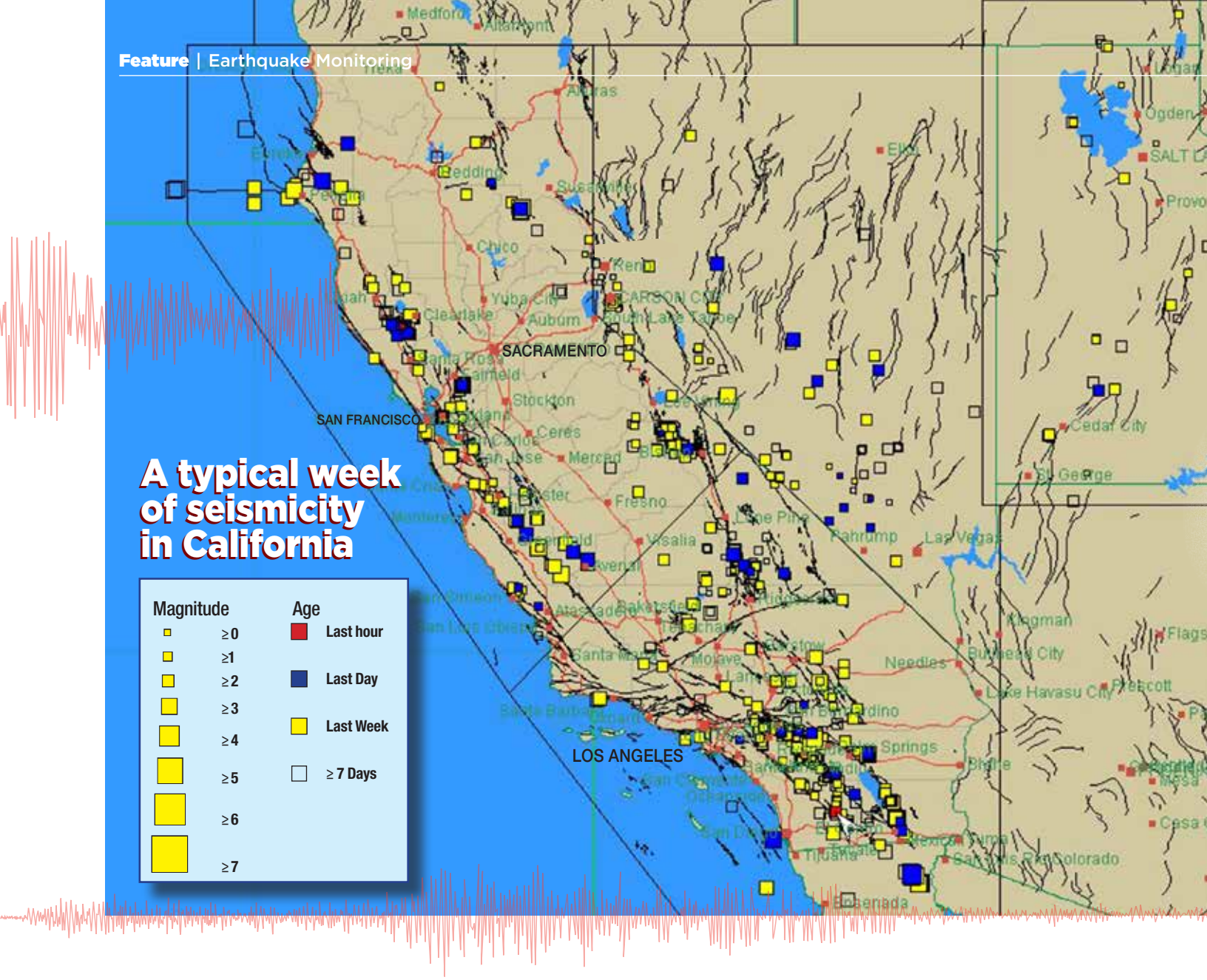
"We are still in the process of upgrading some of the more archaic existing field instrumentation and hope to complete the upgrade in about two years," said Agnew. In addition to the expanding network and the office upgrades, many structures on the SWP are being instrumented for earthquakes for the first time.

"We recently added strong-motion sensors at Dyer Dam, Patterson Dam and Crafton Hills Dam, and have plans to install more sensors on the Crafton Hills Enlargement Dam, once it's completed," said Agnew. "We also placed five instruments in the 17-story Resources Building and two at the Joint Operations Center (JOC) in Sacramento. Beyond that, we plan to add more strong-motion instruments to the remaining unmonitored structures on the SWP."

Several outside agencies are now using incoming digital seismic data to develop an Earthquake Early Warning System that may eventually give all locations on the SWP up to 30 seconds' warning that large seismic shaking will be experienced at their location.

"This warning system may allow field division personnel to shut down certain operations to avoid damage to their facilities," said Agnew. "When the bugs are worked out of this experimental software, an early warning system could even be automated to shut things down quickly, without human intervention. This type of automatic shutdown is already being implemented on the Bay Area Rapid Transit (BART) system to alert and slow trains."

Currently, a few SWP structures have an automated shutdown (closure) feature in case of a seismic event.



"Lower Quail Canal inlet gates and the Peace Valley Pipeline intake structure gates are linked to strong motion instrumentation," said David Panec, Chief of the Dam Safety Branch in the Division of Operations and Maintenance. "When activated, it will initiate gate closure to prevent damage to Warne Powerplant and the draining of Lower Quail Canal and Quail Lake."

An Innovative Seismic Laboratory

The biggest change in DWR's program has been the advent of earthquake notifications. With digital data streaming into the seismic laboratory in near-real time, computers can automatically detect that an earthquake is happening, locate the epicenter, determine the earthquake's magnitude, and notify DWR staff within just a few minutes.

"We now have a computer server system called ShakeCast, which relays these earthquake notifications to all interested parties via email, and telephone calls," said Agnew. "We also run a computer program called California Integrated Seismic Network (CISN) Display that shows all the earthquakes that have happened in the past week on a computer monitor, which is updated continuously." CISN is a collaboration of all seismic networks running in California and nearby states.

The method of seismic data transmission (telemetry) from the seismic field sites to the office has changed dramatically.

"To relay field data to the office, we have evolved from using simple analog dedicated or dial-up phone lines to employing digital Microwave, satellite communication (Very Small Aperture Terminal-VSAT), fiber-optic, cellular modem and Ethernet data transmission methods," said Agnew.

In a cooperative earthquake monitoring effort, DWR shares the data collected from its equipment with the U.S. Geological Survey in Menlo Park, the U.C. Berkeley Seismic Laboratory, and Caltech Seismic Laboratory.

"This sharing of data between federal, state and local agencies alleviates some of the danger of losing important earthquake data during large earthquakes if cell towers and seismic analysis facilities are damaged," said Agnew. "It also has made earthquake location and magnitude determination much more accurate."

Briefing

BDCP to Improve California's Economy

Natural Resources Secretary John Laird and University of California at Berkeley economist David Sunding respond to reporters' questions about a statewide economic impact report on the Bay Delta Conservation Plan (BDCP). The Natural Resources Agency and DWR released the draft study August 5 at a Sacramento press conference.

The analysis shows that the BDCP's proposal to restore habitat and build a new water conveyance system in the Sacramento-San Joaquin Delta would improve California's economy overall. In particular, the report by Sunding found a net economic benefit to the state of $4.8 billion to $5.4 billion, with more than 1 million jobs tied to implementation of the plan and the improved water supply reliability it would bring.

Andrew Fields, Director of Water Policy at the California Alliance of Jobs, joined the press conference. He called the BDCP the "rare project" that can help California both restore its environment and safeguard its economy.

(Left to Right) *On August 5 at the Governor's Office, University of California at Berkeley Economist David Sunding, Natural Resources Secretary John Laird, and California Chamber of Commerce President Allan Zaremberg speak during the BDCP press conference about the statewide economic impact report.*

Creating Awareness with DAC

Are you looking for resources to assist you, or your family or friends who have a disability? Well, right here within our Department is a resource for you: DWR's Disability Advisory Committee (DAC).

DAC is comprised of 10 DWR employees who meet regularly to promote awareness and to advise DWR management on issues, policies and program activities important to our employees with disabilities.

Specifically, DAC promotes disability awareness through the posting of disability-related issues and events on AquaNet, through its yearly October Disability Awareness Month event, and through its book fairs that raise money for DAC events and activities. In the months to come, DAC will use some of its funds to provide scholarships to two DWR employees with a disability. Further, DAC collaborates with other Disability Advisory Committees from other State agencies and departments through the Statewide Disability Council.

By creating awareness, DAC serves to break down the social divide between being disabled and not disabled. Promoting awareness furthers an understanding and acceptance of differences and highlights the same opportunities to employees at all levels with and without disabilities.

If you would like additional information on DWR's DAC, please call the Office of Workforce Equality at (916) 653-6952.

Renewing the State Water Project's Financial Foundation

By Jennifer Iida

Many are calling the State Water Project (SWP) Contract Extension effort the most important undertaking DWR has been involved with since constructing the State Water Project.

The task: To renegotiate the water supply contracts that were signed in the 1960s to provide a water service to the SWP contractors in exchange for payments that provide for SWP financing, capital construction, improvements, and operations and maintenance of SWP facilities.

"It has been a long process getting to the table," said Scott Jercich, DWR Program Manager for Contract Extension.

The urgency can be explained in a nutshell. DWR regularly sells revenue bonds to finance costs associated with development and maintenance of the SWP. It plans to sell bonds with maturity dates that extend for 30 years to help keep costs low. Most of the 29 SWP contracts expire in 2035, and DWR does not sell bonds that extend beyond the termination date of these contracts. As a result, bond terms are currently limited to just 22 years.

"It's huge!" said Perla Netto-Brown, DWR Chief Financial Officer. "We need the contracts renegotiated in order to sustain the financial integrity of the State Water Project well into the future. In other words, it's necessary to extend the termination date of the contracts to allow DWR to continue to sell bonds with 30-year terms to ensure continued water supply affordability to SWP contractors and their water customers."

"It's a very challenging process," said DWR attorney David Sandino. "The key point for DWR is to extend the contracts for a fixed term to give us financial stability that we need in order to move forward."

Sandino described the contracts as the backbone of DWR, with the Department and contractors working to keep the backbone in place with "some adjustments based on modern necessities."

"The SWP is aging," added Netto-Brown. "We're getting to the point now where we do have an anticipated cost in emergencies that come up, so an aging system means more emergencies and we need to make sure we have the financial means to address them."

The public negotiations began in May 2013 and are expected to wrap up by the end of this year.

Potential environmental impacts associated with proposed changes to the contracts must be evaluated in accordance with the California Environmental Quality Act (CEQA). The negotiations of these contracts must be done in a public setting consistent with the Monterey Settlement Agreement, which updated the management of the SWP in 1994. A final CEQA document analyzing possible environmental impacts is expected in early 2016.

Six months after the CEQA process is finished, the SWP contract extensions could be ready to sign and the negotiations will be history.

"It's very exciting to be managing this process because it is of the utmost importance to the future of the SWP and to the people of California," said Jercich.

Updates on the Water Supply Contract Extension Program are available at: **http://www.water.ca.gov/swpao/watercontractextension/**

(Above left) *DWR Deputy Director Carl Torgersen presents DWR's proposed State Water Project contract provisions.*
(Next Page) *DWR staff meeting with SWP Contractors* (right) *for SWP contract negotiations at the Tsakopoulos Library Galleria in Sacramento.*

A VISION for the Future

By Deena Terao

Perspectives from California's First Integrated Water Management Summit

In April 2013, DWR, along with the Water Education Foundation and the California Water Commission, sponsored the State's first Integrated Water Management (IWM) Summit. This event brought together water leaders from State, local and federal agencies and organizations to share experiences and ideas on how managers can effectively align to provide sustainable water resources services in the State in the face of an uncertain future. The Summit launched a new awareness campaign called "Water 360" to help refocus and strengthen the collective efforts of the water management community throughout California.

The recently released proceedings document, "A Commitment to Action," highlights the key themes heard at the Summit. It also reinforces the recommendation from most participants that a new vision for water management in California is necessary.

DWR views integrated water management as the framework for planning and implementation that melds the objectives of improving public safety, fostering environmental stewardship, and supporting economic stability to achieve sustainable management of our state's water resources. The Water 360 campaign invites all water leaders in the

The great hope today is that we are moving past that period of conflict towards a period of sustainable resources management that implicitly considers environmental values and factors and the associated risk and economic consequences of the investment decisions we make.

Mark Cowin, *Director, California Department of Water Resources*

I want to speak to the notion of integration across the regulatory agencies… a lot of times while we will meet and coordinate, we are not sharing resources. We are not sharing work. And therefore we are duplicating efforts and therefore adding years onto decisions that need to be made today.

Caren Trgovcich,
Chief Deputy Director, State Water Resources Control Board

state to adopt the IWM approach. This requires movement out of the single-focus water management "silos" created during the 20th century, to understand all perspectives in a "360-degree" view, agree on a common vision for the future and cooperate on sustainable solutions moving forward. IWM is the approach that can enable alignment, cooperation and leveraging of resources to deliver multi-benefit programs and projects across jurisdictional and watershed boundaries.

The "Commitment to Action" publication describes the obstacles facing water managers and proposes the steps that must be taken to address the challenges:

- Improve cooperation and alignment among local, state, and federal agencies to effectively practice integrated water management statewide
- Change the way we think about managing water and associated resources and articulate a clear and measurable way of defining success that will satisfy a broad set of needs rather than focusing on a single purpose
- Change the way we govern and invest so that governance structures, institutions and funding mechanisms are more innovative and flexible to support a more cooperative and watershed-based approach
- Deliver bold leadership and action to help bring together diverse forces and resources in more effective ways

To view a video of the April Summit, visit the Water Education Foundation's website at **www.watereducation.org**

WHAT IS Water 360?

Water 360 is a campaign launched by the California Department of Water Resources in April 2013 to help refocus and strengthen the collective efforts of the State's water management community by advancing IWM. IWM is a framework for planning and implementation that melds the objectives of improving public safety, fostering environmental stewardship and supporting economic stability to lead to sustainable water resource management. IWM is not a new concept in California, and great strides have been made in the last decade to utilize the approach, particularly at the regional level. The Water 360 Campaign builds on these early successes and calls for broader application across the entire state.

Water 360 recognizes that we are all connected by the water cycle. We depend on and affect each other in the use and management of our State's most precious resource. A change to one part of the cycle impacts us all. We are faced with an uncertain future in terms of a changing climate and environment, a growing economy and an evolving society. Moving forward, we share equally in the responsibility to advance integrated, multi-benefit solutions to meet the challenges. A "360-degree" perspective is needed to measurably improve performance and resiliency of the entire water management system.

DWR is committed to lead this effort in close partnership with other water leaders, particlarly State, federal and local agencies; and in collaboration with all stakeholders. Success will require improved cooperation and alignment at all levels of government and stable financing to deliver multi-benefit, long-range and fiscally responsible solutions.

Digital copies of the proceedings document can be downloaded at:

http://www.water.ca.gov/publibrary/reports/water360proceedings.pdf

DWR's First LEED Building

A Green Hom

DWR's new Pearblossom building completed in March 2013 is the first to be designed to the Leadership in Energy and Environment Design – New Construction (LEED-NC) standards at DWR.

Completed in two years, the 20,608-square-foot building located 58 miles northeast of Burbank houses DWR staff of the Division of Operations and Maintenance's (O&M) Southern Field Division Headquarters. The Division of Engineering's (DOE) Pearblossom Project Headquarters, formerly called the Lancaster Project Headquarters, also is located there.

"We're pleased with the building and all its sustainable qualities," said Dave Otto, DWR Senior Architect from the Division of Engineering. "We had a goal to follow the Green Building Initiative, and it looks like we succeeded." Under Governor's Executive Order S-20-04, the initiative calls for designing, constructing and operating all new and renovated state-owned facilities paid for with state funds as "LEED Silver" or higher certified buildings.

"The LEED certification process takes a minimum of a year after a project is completed," said Kanta Jasmine, DWR LEED Project Administrator. "The Certification process is implemented through the Green Building Certification Institute (GBCI), an organization that administers United States Green Building Council's (USGBC) LEED Green Building Rating Systems."

To achieve certification, a building's design must produce energy savings and water efficiency. The Pearblossom building includes solar panels, heat pumps, low-flow plumbing fixtures, three electric car-charging stations and treatment of wastewater to remove nitrates before the water is used for landscape irrigation.

Once the project is registered and completed, calculations and forms are submitted to the GBCI website to start the review process. Certification in one of the four LEED levels is determined by a rating system that assesses several categories—site sustainability, water efficiency, energy and atmosphere, materials and resources, indoor environmental quality and innovation and design process.

"All calculations so far indicate we should be on track for the Gold level certification of the LEED-NC version 2.2 rating system," said Jasmine.

The new building includes 50 office

Tony Meyers (center), Chief of Southern Field Division's Engineering Section, David Sale (right), Chief of Engineering's Pearblossom Project Headquarters and Bill Poulton (left), a Field Engineer with Engineering, standing by new Pearblossom building.

We had a goal to follow the
Green Building Initiative,
and it looks like we succeeded.

—Dave Otto,
DWR Senior Architect, Division of Engineering

cubicles, 16 private offices, three meeting rooms and a conference and training center. In addition to the expanded office spaces, the new site facilitates access to project information among employees.

"We are now working in the same State facility with DOE's main client, which is O&M," said David Sale, DOE's Pearblossom Project Headquarters Chief. "This has enabled DOE's Construction Branch to share resources, such as conference and training rooms and easy access to mobile equipment. It also gives the Construction Branch direct access to the Southern Field Division's Planning and Scheduling, Engineering, Plant Maintenance and Civil Maintenance Branch staff. This allows them to assist DOE with State Water Project outages by providing historical knowledge and data of their facilities."

"Everyone has more personal space, and that space is configured to support the work activities," added Blaine Laumbach, O&M Hydroelectric Plant Operations Superintendent at Southern Field Division. "The work areas have an atmosphere of new beginnings. Clean, fresh, open and well lighted is always inspiring. Plus, having joint occupancy with the DOE Office has provided us an opportunity to get to know each other better and to work together more effectively."

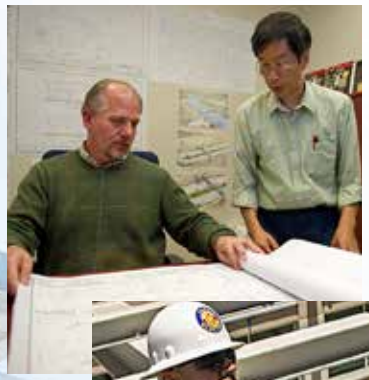
Approximately 36 people from DOE and O&M and several Federal Energy Regulatory Commission Relicensing staff as well as about 15 consultants occupy the new facility and will be asked to complete a survey about their new workplace experience. LEED encourages indoor environmental quality verification from the building occupants.

"They'll be issued a survey to find out if the building is performing to their expectations," said Otto. "We're hoping for high marks, although feedback is appreciated to correct any unsatisfactory issues."

According to the Department of General Services 'Green California' site, there are currently 50 LEED-NC certified buildings owned or leased by several State agencies.

For a list of LEED buildings in California, view at **http://www.green.ca.gov/GreenBuildings/leedcertbldgs.aspx**

More information on the Unites States Green Building Council is available at **http://www.usgbc.org/**



(Left to Right) Senior Architect Dave Otto reviewing Pearblossom building construction documents with Associate Architect C.Y. Kan. Photovoltaic panels being installed. Denitrification wastewater system during installation.

California Department of Water Resources

A Bird's Eye View

Photos courtesy of NASA

DWR partners with NASA on aerial surveys of levees and subsidence in the Delta

DWR and NASA's Jet Propulsion Laboratory (JPL) are conducting a pilot project to get a clearer picture of Sacramento-San Joaquin Delta levees.

The four-year project that began in 2009 is exploring whether an aircraft-based radar system is capable of pinpointing seepage and movement in the approximately 1,100 miles of Delta levees.

Detecting movement signaling distress in the levee system would allow earlier response to trouble spots in levees protecting Delta homes, farms and infrastructure.

(Left to Right) Joel Dudas of DWR and Cathleen Jones of NASA/JPL review Delta map of Ryer Island's seepage areas. NASA imagery helps DWR find areas of concern along Delta levees. Joel Dudas of DWR with Cathleen Jones and Karen An of NASA/JPL view vegetation in the Delta.

> This system may be able to measure distance and changes accurately at magnitudes **as little as 8 millimeters...**
>
> **—Joel Dudas**
> *Senior Engineer, DWR*

"Synthetic Aperture Radar (SAR) has been used by NASA for years, but this was NASA's first implementation of single-antenna, repeat-pass differential SAR on a plane," said Joel Dudas, a Senior Engineer in DWR's FloodSAFE Environmental Stewardship and Statewide Resources Office and manager of this project.

"The SAR interferometric radar is used to measure changes in ground elevations at a very precise level of detail," said Dudas. "Because of the precision, it may be usable to locate surface deformations on a comprehensive scale."

During each mission, a NASA Gulfstream-3 aircraft scans the levees from three or four directions in a couple of hours.

"NASA produces the data from their research, and we help them try to interpret their results based on what we know about the physical Delta and surrounding area," said Dudas, a DWR expert in Geographic Information Systems. "Because the radar output is so complex, one of the big challenges we face is providing proper interpretation of the imagery."

The SAR system is exceptionally sensitive and can be affected by air density, water vapor, reflectivity, vegetation and movement.

"In theory, this system may be able to measure distance and changes accurately at magnitudes as little as eight millimeters," said Dudas. "Detecting movement is the main purpose. The other big result, which is a little simpler and more reliable, is that it can measure changes in soil moisture."

DWR's Delta Light Detection and Ranging (LiDAR) project piqued NASA's interest in applying its technology in the Delta. LiDAR took months of processing to provide absolute elevations. By contrast, the SAR system provides relative changes in elevation remarkably faster and cheaper.

"Through this airborne system, we are able to image all the Sacramento-San Joaquin Delta levees in two and a half hours," said Cathleen Jones, researcher and project director at JPL.

"Since the flights can be launched with a 24-hour notice, we potentially could have a faster tool to spot movement during high water events and see levees distressing or buckling before the human eye can detect it," said Dudas.

Along with DWR and NASA/JPL, the U.S. Geological Survey, Department of Homeland Security (DHS) and a HydroFocus staff have also contributed to this project. NASA and DHS are now also using the technology to study the levees in Mississippi River Delta.

WIDELY Diverse

By Elizabeth Scott

(Above) *ACWD General Manager Walt Wadlow.*

(Below) *Assistant General Manager Robert Shaver and District Board President Jim Gunther inspect ACWD's Newark Desalination Facility*

ACWD General Manager Walt Wadlow checks the progress of installation of a new diversion pipeline. The project will enhance water supply reliability in the District's service area.

"Widely Diverse" is the phrase used most by those describing both the Alameda County Water District's (ACWD) approach to providing a reliable water supply and the East Bay customers it serves.

A mid-size agency in terms of budget and number of employees, ACWD employs a rare combination of supplies and technology to provide 43 million gallons of water on an average day to a population of more than 334,000 people. The District draws from imported water, local groundwater and potable water generated by desalination in order to supply a mix of residential, business and institutional customers within a 105-square-mile area.

It's a strategy born from lessons learned during the early settlement days of the San Francisco Bay Area.

At the turn of the last century, the area was richly agricultural and water supplies were used primarily for irrigation. Originally designated Washington Township, the area later came to be known as the cities of Fremont, Newark and Union City. The region slowly changed character after 1871 with a steady influx of settlers. It was eventually seen as a very useful area from which to take water to support growth in Oakland and San Francisco because of its abundance of local groundwater and water from Alameda Creek. The creek at that time was free flowing with easily accessible artesian wells. However, the original settling agriculturists were concerned that if the trend continued, there would not be enough local water left to supply the area's existing agricultural interests.

The initial efforts to preserve the local water resources and prevent the exportation of the area's water purely as a means of providing water for the development of Oakland and San Francisco led to the formation of the Alameda County Water District in December 1913. ACWD was the first county water district founded in the State of California under the Caminetti Bill (The County Water District Act of 1913).

The newly-formed legal entity immediately began a 20-year process to utilize the court system to enforce its water rights. Regaining control of its local water, as well as purchasing parts of other water systems, gave the area the necessary resources needed to maintain its agricultural interests as well as further develop as a community.

The post-World War II building boom led to a wider focus of concerns for the District. The area needed protection from annual floodwaters, so the U. S. Army Corps of Engineers widened and straightened Alameda Creek. This move also provided the District with additional supplies for the burgeoning population by recharging the groundwater through percolation. However, by the 1960s, the area's demands were more than what local supplies could meet, and the new State Water Project (SWP) provided the solution. In 1962, ACWD became the first water contractor to receive imported State water by way of the SWP South Bay Aqueduct.

As technology developed over time, the

District took groundbreaking measures to keep a step ahead of demand. When the District's Manuel J. Bernardo Softening Plant began operations in 1971, it was the world's largest fixed bed ion exchange water softening plant in the world. Three rubber dams were placed on Alameda Creek to streamline the flow of water into ACWD's percolation ponds. At the time of the installation of the first rubber dam in 1972, it was the largest in the world, and one of the first in the United States.

Today, the District supplies its customers with water from not only local groundwater (40 percent) and imported water from the SWP (40 percent), but also water imported from the San Francisco Public Utilities Commission's Hetch Hetchy Water System (20 percent). The District, boasting an enviable AAA bond rating, has built 12 reservoirs and tanks and four treatment facilities that include the Newark Desalination Facility, the largest brackish desalination plant in Northern California.

Walt Wadlow, a Stanford-educated engineer and recognized California water policy leader, is ACWD's steward to guide the District through the increasingly critical water management issues of the 21st century. A former President of the State Water Contractors, Wadlow joined ACWD in 2007 as Operations Manager and was appointed General Manager by its Board of Directors in 2009. Wadlow came to ACWD from the Santa Clara Valley Water District where he forged a career from Junior Civil Engineer to Assistant General Manager, ultimately representing the agency in development of State water policy surrounding Bay-Delta issues through participation in the CALFED program.

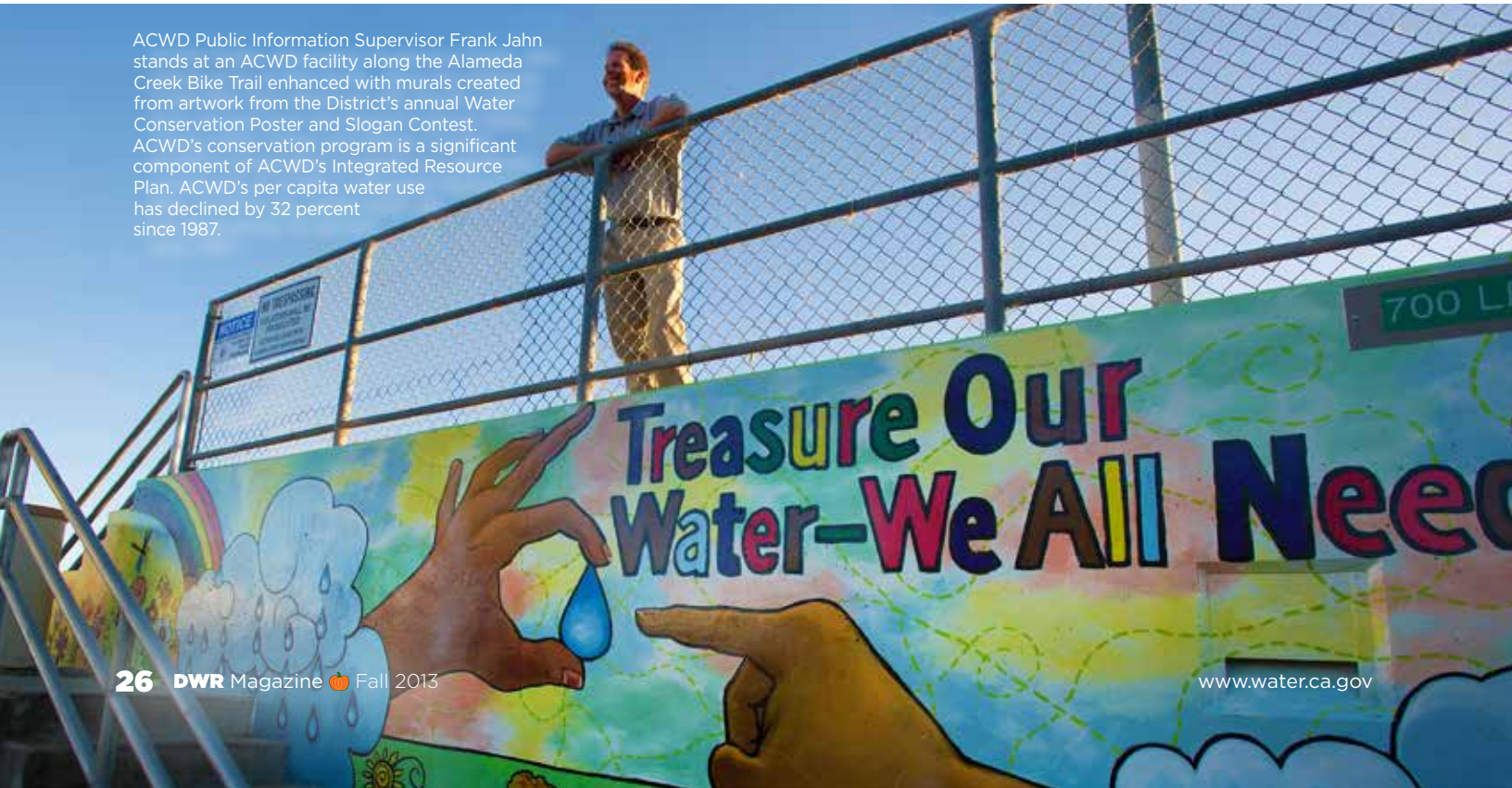
Wadlow says that as the District looks toward its centennial next year, he can credit meeting every goal in ACWD's 1995 Integrated Resources Plan (IRP) for giving the District a business advantage today. "The District at that time laid out a business strategy to put in place the facilities needed to meet growing demands and to develop a very diverse portfolio of supplies to utilize," said Wadlow. "We're proud to say we did it." Wadlow says ACWD now concentrates on upgrading aging infrastructure and improving the seismic reliability of the water system which is located astride the Hayward Fault.

That early foresight again places the mid-size District a step ahead of many other urban agencies today.

"We've been able to focus on optimizing how we combine our supply sources and technological resources to meet water quality goals, as well as optimizing them to contain costs, and that's a little bit of a luxury," explained Wadlow. "A lot of the urban areas in the state are still focused on building the facilities they need to provide the adequate water supply for their customer base now and in the near future."

Board President Jim Gunther says the District's 1995 IRP was an innovative step in water management for its time, but the leadership of recent years deserves credit for seeing that plan reach fruition. He says the IRP will be reviewed again this year.

"Our channeling to that early foresight in planning paid off," explained Gunther. "Our motto was and will be again: 'Don't live for today; live the plan for tomorrow.'"



ACWD Public Information Supervisor Frank Jahn stands at an ACWD facility along the Alameda Creek Bike Trail enhanced with murals created from artwork from the District's annual Water Conservation Poster and Slogan Contest. ACWD's conservation program is a significant component of ACWD's Integrated Resource Plan. ACWD's per capita water use has declined by 32 percent since 1987.

People

a Safer Place

From strip doors to safety nets, Glenn Ward, a Hydroelectric Plant Mechanic II at Southern Field Division, has found ways to improve safety at his workplace. Glenn was recognized for his suggestions to install safety nets across units and strip doors at alcove entrances of units at Pearblossom Pumping Plant.

Net Protection

Safety nets are now installed across the motor housing of each unit when performing routine maintenance at Pearblossom Pumping Plant.

When the pumping plant's units were disassembled for maintenance, the area around the perimeter of the units had hand rails installed, but there was still a potential for employees or equipment to fall into the motor housing. Although no serious accidents have occurred at this pumping plant, the safety nets will help prevent accidents and serious injury to employees.

Noise Reduction

To reduce noise levels, clear strip doors were added to the entrance of alcove areas on each pumping unit at Pearblossom Pumping Plant.

The entrance of the alcove areas were open, allowing chronic exposure to noise at levels which will could cause hearing loss. Ward's suggestion to install barrier strip doors has helped to dampen noise levels.

Information about the State's Employee Suggestion Program can be found at **www.calhr.ca.gov.** The Merit Award Program is located on DWR's home page at "Popular Links," or by contacting DWR's Merit Award Administrator at **Victoria.Whipkey@water.ca.gov**

Going the Distance

DWR's new Fuel Management System

From Red Bluff to Glendale, 16 DWR fuel sites have been modernized and 26 telemetric sites have been installed and programmed to gather fuel and mileage data for more than 1,000 DWR on-road vehicles.

Managed by the Division of Operations and Maintenance (O&M), the fuel and mileage management system's major overhaul began in 2011.

"Security of our fuel stations and accountability for the fuel used were the number one reasons this project was undertaken," said Wendy Underhill, a Hydroelectric Plant Mechanical Supervisor with O&M.

The implementation of the new fuel and mileage system led to the revamping of the aging equipment and methods of collecting the fuel usage data.

"We wanted to implement a transparent fuel system, and we wanted users to see what we see," said Brian Borlace, Chief of Mobile Equipment Operations with

With the newly installed fuel tracking system, Stanley Randall of Operations and Maintenance's Fleet Management Branch pumps gas at the Bryte fuel site.

Wendy Underhill views the new tank monitoring system installed at 16 DWR sites to keep track of fuel usage.

the Fleet Management Branch. "Vehicle users and divisions can now track their fleet fuel usage on a web-based database and in SAP."

Previous Method

With only a few of the 16 fuel locations recording data, less than 50 percent of the fuel usage data was collected in the older system.

"Prior to our new system, the normal method to record a fuel transaction was for the driver to write it down on a clipboard," said Underhill. "This meant soggy paper when it was raining, missed transactions, erroneous entries—in other words not usable information."

Since less than a quarter of DWR's sites had a tank monitoring system that worked, DWR's Fleet Management Branch relied on staff to manually check the tank levels using a dipstick.

Tracking the Inventory

Designed to inform the Fleet Management Branch of a leak or when fuel supplies run low, the new tank monitoring system is programmed to deliver data directly to the fuel system database.

"The tank summary report in the new fuel system gives fuel system administrators and fuel site staff a visual status of the fuel levels in their tanks," said Underhill. "Warehouse staff monitors the levels daily and each site sets up a custom alarm level to notify them via email when their fuel supply is low. This will help them with planning their fuel orders."

According to Diane Huey of the Division of Technology Services (DTS), the vendor removed the old fuel consoles and installed the new console at each of the fuel sites. DWR's field division and flood maintenance yard staff also assisted with the site preparation of the new fuel system installation.

Capturing the Fueling Data

To identify both employees and vehicles pumping fuel at each location, the site includes a proximity reader for scanning employee badges and a card swipe for DWR fleet voyager cards.

"Basically, the fuel system authorizes a person and vehicle to get fuel, turns the fuel pump on and off, inputs who used it and records the time and how much fuel was pumped," said Underhill.

This data, combined with the system programming, helps with the billing of the fuel.

"Previously, all of the fuel was paid for by the division that owned the fuel site," said Stanley Randall, Associate Governmental Program Analyst with O&M's Fleet Management Branch. "Now it is automated, making it easier to bill a specific program. It automatically charges the cost object associated with each vehicle."

The new console also has a weatherproof casing to withstand extreme temperatures – particularly needed at Southern California desert locations—and LED screen commands that are visible in bright sunlight.

Preventive Measures

The new telematic system captures a DWR vehicle's engine code and odometer reading wirelessly from the 26 statewide telemetric sites and sends the data to the SAP fueling database. The system helps inform the DWR's Mobile Equipment Shop staff when there is any kind of engine problem or need for vehicle services based on mileage.

"DWR's Mobile Equipment Shop staff within O&M's Fleet Management Branch are installing the onboard devices in DWR's on-road vehicles," said Huey, a Senior Staff Information Systems Analyst with DTS. "They will attach the telematic devices to the vehicle's internal computer and install the antenna near the vehicle's windshield."

The new telematic system will affect 100 percent of DWR's on-road vehicles, including passenger cars, dump trucks and those that transport heavy equipment.

"All three major components—the tank monitoring, fuel monitoring and telematic system—work together to gather and transmit data to DWR's fueling and mileage database allowing better management of the Department's fuel and vehicle assets," said Underhill.

> **"Security of our fuel stations and accountability for the fuel used were the number one reasons this project was undertaken."**
>
> **—Wendy Underhill**
> *Hydroelectric Plant Mechanical Supervisor*

Meet Our New Chief Deputy Director: Laura King Moon

Laura King Moon's appointment as DWR's Chief Deputy Director in September has transitioned her from a singular focus on the massive Bay Delta Conservation Plan (BDCP) to a broader role within the Department.

As the BDCP's project manager since 2011, Laura organized and led a team of DWR employees and outside consultants in producing a plan that attracted comment and controversy from its inception seven years ago.

You'd expect nothing less of the far-reaching BDCP and its co-equal goals of ensuring a reliable water supply for California and enhancing theSacramento-San Joaquin Delta ecosystem at a cost of billions of dollars.

With implications for all of California, most especially in the tranquil Delta, the Central Valley's farming industry and throughout Southern California's megalopolis, BDCP has the daunting task of convincing diverse interests and populations that it's the right plan at the right time for the right reasons.

DWR's new Chief Deputy Director thinks it can be done. "I'm constantly amazed what a difference it makes when you sit down and talk with people as opposed to communicating with them in documents," Laura says. "People sometimes don't want to put their thoughts in writing, but a face-to-face opportunity to talk can often work things out."

It's a lesson she learned decades ago as a Senior Staff Scientist with the Natural Resources Defense Council (NRDC) after she opened a NRDC office in Honolulu and traveled there frequently. It influences her thinking today about resolving perceived conflicts in the Delta.

"I avoided a lot of mistakes in Hawaii because I had the good fortune to know people who understood how you do things there," she says. "They call it `talk story.' I learned very quickly it's a small community and that you can get things done once you've established relationships with people. You do that by listening, not talking. I'm naturally a listener, and I learned the business value of listening in Hawaii."

Laura says the Delta is similar to the islands in some respects that deserve respect. "The Delta's a small community and in some ways is sheltered from the rest of the state, just as Hawaii is sheltered from the rest of the country. That has pluses and minuses. Time may move a little slower, but people know each other and things are done based on relationships."

Some have criticized Ms. Moon's appointment because of her previous association with the State Water Contractors as assistant general manager. They suggest she'll put the contractors' interests ahead of all others as BDCP is implemented.

She responds, "I think people who say that don't know me very well and probably look only at the latter third of my career and not my career as a whole. I do feel strongly that we have to guard the interests of the ratepayers and water agencies that will pay for most of BDCP, but this is a State project, and DWR must respect the interests of all California residents.

"When you've worn both hats as I have, it's not possible to look at BDCP from just one perspective without being reminded of the bigger picture."

Laura received Bachelor and Master of Science degrees in natural resources and energy conservation from the University of California, Berkeley. In addition to working with the NRDC, she was a Special Assistant to the U.S. Bureau of Reclamation's Regional Director and an Environmental Affairs Officer for the East Bay Municipal Utility District.

In announcing Laura's appointment, DWR Director Mark Cowin said her years of experience with complex water and environmental issues and her relationships with key stakeholders will be valuable in meeting DWR's challenges.

Laura says she accepts those challenges gladly. "I've been amazed at what I've witnessed inside this building for the past two years," she says. "There's dedication, professionalism and an esprit de corps despite the furloughs and difficulties of being in State government.

"I want to help support the organization," she says. "There's a lot that could be done to make DWR better if we had more resources, and I want to help make it happen. I'm still learning the job, but I feel like I'm in the right place at the right time."

New Assignment: Jeanne Kuttel

Bringing more than 20 years of engineering expertise in flood management, dam safety and environmental projects, Jeanne Kuttel became the first female Chief of the Division of Engineering (DOE) on May 13, 2013.

As Chief of DOE's staff of 320, Jeanne's responsibilities include overseeing DOE projects, such as dams, canals, tunnels, pipelines, pumping and power plants, flood protection facilities, fish enhancement projects and facilities to improve water quality.

"My goal is to help DOE achieve our current mission, which is to safely provide timely, cost effective and quality engineering, geology, construction, real estate, geodetic and administrative services to our clients," said Jeanne.

When Jeanne was the Chief of the Geotechnical Services Branch from 2007 to 2013, she oversaw several projects, such as Perris Dam Remediation, Crafton Hills Reservoirs Enlargement, Pearblossom administration building, critical levee repair coordination and emergency repairs for Gorman Creek and Milepost 342.

"I have really enjoyed being involved in the evaluation, design and construction of new dams, such as the new zoned embankment dam at Crafton Hills," said Jeanne. "Even though it's small, it is one of the coolest opportunities in geotechnical engineering to design an earthen dam."

Other than being an Engineering Assistant in Executive for Chief Deputy Director Bob Potter from 1998 to 1999, Jeanne's career has been dedicated to the Division of Engineering. Starting as a Junior Civil Engineer in 1991, her projects with the Civil Engineering Branch include being lead designer for the Lime Saddle boat launch ramp at Lake Oroville, Schaeffer Fish Barrier on the Kern River with the Department of Fish and Wildlife, Grizzly Island Fish Screen, and Feather River Fish Hatchery. She also worked on Edmonston's Adit Refurbishment, Vernalis Water Quality Monitoring Station, Citrus Reservoir, Dyer Reservoir, Castaic Dam Spillway Repair, Cache Creek Setback levees, and Twitchell Island levee rehabilitation project.

"My most memorable assignment was being on flood duty in 1997 and 1998," said Jeanne. "Being involved in the emergency response was just amazing. Long shifts and nights in two months of amazing and crazy work with things you can't imagine happening actually happening."

As part of her assignment during the floods of 1997, Jeanne performed high water staking in Oroville, witnessed firsthand a levee breach in Manteca and worked at incident command centers.

Floods have been a significant part of Jeanne's career in many ways. Her path to becoming an engineer began after witnessing engineers at work during the floods of 1986. Jeanne, who was a senior in high school at the time, discovered her love for engineering after spending a day with a City of Lodi Civil Engineer during the University of the Pacific's engineering day.

"I was teamed up with a civil engineer from the City of Lodi who, as part of the event, took me with her on her assignment to manage the public works during the flooding in Lodi along Interstate 5," said Jeanne, who is a native of Lodi. "I got to sit in the command center and watch her in action. When you look back, it's kind of ironic. This is how I got swayed to engineering. Before that, I didn't even know what an engineer did or was."

A registered Civil Engineer, Jeanne has a Master of Science degree in Civil and Environmental Engineering and a Bachelor of Science degree in Civil Engineering from the University of California at Davis.

Jeannne was the American Society of Civil Engineers' (ASCE) Outstanding Young Civil Engineer in Public Sector in March 1998. She was president of the ASCE's Sacramento Section Younger Member Forum from 1998 to 1999, and a member of the Board of Directors for the Cal Aggie Engineering Alumni Association from 1997 to 2003.

In addition to her busy career, she and her husband Chris have two children—Kathy (5) and Alex (3)—who keep them constantly on their toes.

Volunteer Trainers and Presenters in 2012

The DWR Training Office would like to acknowledge the more than 160 volunteer trainers and presenters who supported DWR's training program throughout 2012. Because they served as class instructors or made presentations as part of a class, in addition to their regular responsibilities, we are truly fortunate to have such dedicated individuals who are willing to put in the extra time and effort to share their knowledge and expertise. These volunteer trainers were part of over 150 courses, training more than 2,600 participants. We thank them for their commitment to employee training and development.

(Right) Training Officer Sean Walsh with the Training Office since 2001 leads a DWR Orientation session.

Kathy Aldana
Arlene Bailey
Terry Becker
Christina Boggs
Vicki Camp
Andy Chu
Peter Coombe
John Curless
Jennifer Dong-Kawate
Ted Frink
Teresa Geimer
Neil Gould
Herb Hereth
Jennifer Iida
Lauma Jurkevics
John King
Jeanne Lee
Ignacio Lopez-Alvarez
Jaime Matteoli
Dean Messer
Lew Moeller
Cale Nasca
John Pacheco
Jim Pearson
Mitch Pryor
Doug Rischbeiter
Dave Samson
Kasey Schimke
Mary Simmerer
Dave Starks
Allen Thompson
Megan Walton
Molly White

Ted Alvarez
Melody Baldwin
Tom Beiler
Chris Bonds
Dave Carlson
Francis Chung
Mark Cowin
Aaron Cuthbertson
John Edney
Guy Gagot
Danielle Gist
Kamyar Guivetchi
Art Hinojosa
Jeffrey Ingles
Dave Kearney
Kathie Kishaba
Latrice Leslie
Rick Louie
Daniel McConnell
Mutaz Mihyar
Michelle Morrow
Steve Nemeth
Mark Pagenkopp
Kathy Perry
Jay Punia
Dave Rizzardo
Raymond Sanchez
Dan Schwartz
Sue Sims
J Pierre Stephens
Aileen Tokunaga
Elizabeth Ware
Nikki Willson

Jamie Anderson
Gary Bardini
Mike Bingaman
Mike Bradbury
Lily Cervantes
Nova Clemenza
Barbara Cross
Sharmane Daniels
Teresa Engstrom
Myra Galvez
Jim Gleim
David Gutierrez
Mark Holderman
Amanda Jack
Ryan Keith
Jeanne Kuttel
Jim Lin
Elissa Lynn Gruner
Leah McNearney
Aaron Miller
Ron Mountjoy
Perla Netto-Brown
David Parker
Bob Pierotti
Andy Reising
Paul Romero
Rita Sanko
Andrew Schwarz
Brian Smith
Keith Swanson
Craig Trombly
Matthew Warnick
Gil Wong

Michael Anderson
Rob Barry
Lauren Bisnett
Tuan Bui
Teresa Chaney
Binta Coleman
Cathy Crothers
Sean DeGuzman
Sonny Fong
Tim Garza
Frank Glick
MD Haque
Eric Hong
Rich Jerue
Kathy Kelly
Richard Le
Brandon Littlejohn
Andy Mangney
Angie Mejia
Maury Miller
Dave Mraz
Bob Nozuka
Karen Parr
Andy Pollak
Andrea Riley
Maury Roos
Jane Schafer-Kramer
M. Elizabeth Scott
Harry Spanglet
Selwyn Thomas
Stephanie Varrelman
Ray Welch
Derek Yagi

John Andrew
Ron Bass
Kora Bitcon
Rick Burnett
Erin Chappell
Rob Cooke
Bill Croyle
Wendi Dodgin
Bill Forsythe
Dennis Gastinell
Gretchen Goettl
Amanda Hardy
Scott Hunt
Christina Jimenez
Spencer Kenner
Jeannie Lee Jones
Leiji Liu
Lorraine Marsh
Paul Mensch
Nancy Miller
Jinny Munro
Kim Oliphint
Dave Paulson
Rudy Portis
Juanita Rios
Mitch Russo
Mary Jo Schall
Michelle Selmon
Kathy Stanley
Ted Thomas
Nancy Vogel
Victoria Whipkey
Dan Yamanaka

State Service Anniversary—40 Years

Melinda Woods
Office of Chief Counsel
Executive Assistant
June 2013

CONGRATULATIONS

… to DWR's Newest Parent:

Steve Doe, an Engineer with the South Central Region Office, has a son named **Sean Michael Kofi Doe,** who was born on July 26, 2013 weighing 6 pounds, 13 ounces and 18.9 inches long.

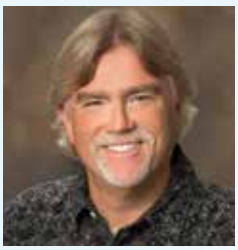
25 Years

Raymond S. Aguilar III
California Energy Resources Scheduling
Senior Hydroelectric Power Utility Engineer
October 2013

Sara Denzler
FloodSAFE Environmental Stewardship and Statewide Resources Office
Program Manager II
June 2013

Scott Jercich
State Water Project Analysis Office
Principal Engineer
October 2013

Annette Lockhart
Engineering
Transportation Surveyor
October 2013



Robert Martinez
Engineering
Electrical Engineering Technician III
November 2013

Raymond Morin
Operations and Maintenance
Senior Engineer
August 2013

David Mraz
FloodSAFE Environmental Stewardship and Statewide Resources Office
Principal Engineer
June 2013

Eric S. Pyle
Operations and Maintenance
San Joaquin Field Division
Hydroelectric Plant Electrician II
November 2013

Mark Thompson
Operations and Maintenance
Associate Hydroelectric Power Utility Engineer
November 2013

Ray Valdovino
Technology Services
Staff Information Systems Analyst
October 2013

No Photo Available

Wilson Eashoian
Operations and Maintenance
Senior Hydroelectric Power Utility Engineer
August 2013

Patricia Gilbert
Flood Management
Environmental Scientist
November 2013

Mohammad Rayej
Statewide Integrated Water Management
Senior Engineer
August 2013

New Hires

Emma Albert
Fiscal Services
Associate Accounting Analyst

Nivedita Amtey
San Joaquin Field Division
Environmental Scientist

Joe Arostegui
Technology Services
Senior Information Systems Analyst

Emmanuel Asinas
SIWM***
Research Manager III

Meredith Barthel
Fiscal Services
Accountant Trainee

Richard Bergeron
Southern Field Division
Utility Craftsworker

Christopher Binger
Technology Services
Systems Software Specialist III

Devin Bowling
San Joaquin Field Division
Utility Craftsworker

Richard Brown
Delta Field Division
Control System Technician I

Nathan Burley
Flood Management
Engineer

Teela Calaustro
Human Resources Office
Personnel Specialist

Doug Carlson
Public Affairs Office
Information Officer I

Clark Churchill
Southern Region Office
Engineer

Curtis Climer
San Luis Field Division
Utility Craftsworker

Kathy Cole
Human Resources Office
Training Officer I

Esther Dicarlo
Engineering
Office Assistant (Typing)

Margaret Dutton
South Central Region Office
Engineer

Omar Fernandez
Engineering
Office Technician (Typing)

Ruben Garcia
Technology Services
Systems Software Specialist II

***Statewide Integrated Water Management

Retirements

Douglas Brown

Douglas Brown, who retired as DWR Transportation Surveyor Party Chief with Division of Engineering, has traveled often during his 47 years of surveying for cities, counties, military, state and private agencies.

"Throughout my career, I think what I enjoyed the most was the coordination aspect between myself and the engineers, utilities, contractors and even the property owners," said Doug.

The Arizona native, who spent his early years in Tempe and Phoenix, relocated to California in 1964.

Doug served in the U.S. Army in 1965 as a Technical Illustrator in Heidelberg, Germany where he was stationed for three years. He then spent 27 years working for the City of Antioch in the San Francisco Bay Area and for a variety of private engineering firms where he specialized in transportation surveys and supervised construction for multi-family apartments and condominiums.

"While working with the County of Contra Costa, I was responsible for warranting, designing and overseeing the construction on approximately 10 intersections in the unincorporated portions of the county as well as plan-checking and overseeing the construction on another dozen or so intersections," said Doug. "This was the most challenging undertaking of my young career and I loved every minute of it."

Doug, who took engineering, surveying and math classes at Diablo Valley College, began his 20 years at DWR with the Division of Land and Right of Way in 1992.

He highlights his time spent with the Division of Design and Construction (now Division of Engineering), as Chief Surveyor for the Coastal Aqueduct Phase II Project from 1993 to 1996, as one of his most memorable projects. His unit was responsible for coordinating with the project contractors, design staff and environmental monitors. They did field layout staking of the centerline and easement lines for the 72-mile pipeline alignment and dozens of project access roads.

"This project was a unique challenge for me and my staff, requiring us to work many long days and weekends to meet the schedule," said Doug. "I am grateful to have worked on this project as I was able to use all of my previous experience and learn a great deal more on this very complex and challenging assignment."

As part of the Cadastral Surveys Unit in Engineering's Geodetic Branch, his projects included the South Bay Aqueduct Improvement Project, East Branch Extension and Enlargement and the North Bay Aqueduct Terminal Facilities. Doug also worked on Central Valley Flood Protection Board projects dealing with levee and river bank improvements.

Doug's retirement plans include fishing and enjoying a 10-day Alaskan cruise. Aside from traveling and reeling in fish, he plans to spend time gardening, mastering crossword puzzles and dipping into amateur woodworking.

Teresa Geimer

Fresh out of high school without a career path in mind, Teresa Geimer's favorite community college math classes led her to the path of a rewarding 30 years as a civil engineer.

"I have enjoyed working on projects that are a team effort," said Teresa, who retired as a Supervising Engineer with the Bay-Delta Office's Delta Conveyance Branch. "Two such projects are the Environmental Water Account and the State Water Project Delta Compliance Program (SWPDCP). I learned a lot working on both of these programs and there was a lot of cooperation among the staffs of varying DWR divisions and other State and federal agencies involved in these projects."

With a year at the Department of Transportation, Teresa began her 29 years at DWR in 1984. Her DWR projects include working on computer modeling of rivers and Los Banos Grandes Reservoir program in the Division of Planning (now Bay-Delta Office), Delta setback levees and the Kern Water Bank in the Division of Design and Construction (now Division of Engineering), and State Water Project water delivery projects for the State Water Project Analysis Office. She also worked on SAP Phase 2A Core Team and water transfer projects, including the Dry Year Water Purchase and Environmental Water Account programs. In 2007, she became an assistant to Deputy Director Jerry Johns and managed the 2009 Drought Water Bank. Returning to the same division of her first DWR assignment, she joined the Bay-Delta Office in 2010.

Teresa enjoyed the planning part of engineering where the projects were or will be completed, such as water transfers, the fish science building and warehouse and the new fish release sites projects.

She attributes the best part about working at DWR to her co-workers.

"We have interesting work that is important to the State and very hard working, dedicated and professional people doing the work," said Teresa.

With travel in her retirement plans, Teresa's next big trip is to raft through the Grand Canyon for two weeks in June 2014. She also enjoys creating art, which she says may bring about a second career.

"I like working in many kinds of arts and crafts, including watercolor and oil painting, jewelry making and woodworking," said Teresa.

New Hires

Christopher Geach
Environmental Services
Environmental Scientist

Daren Gomes
San Luis Field Division
Utility Craftsworker

Mario Gomez
Delta Field Division
Utility Craftsworker

Mark Gouveia
Operations and Maintenance
Heavy Equipment Mechanic

David Harris
Technology Services
C.E.A.

Matthew Hoffman
Flood Management
Water Resources Technician I

Brittney Hosey
Engineering
Office Assistant (Typing)

Kristopher Jones
Environmental Services
Senior Environmental Scientist

May Khang
Executive
Office Technician (Typing)

Golam Kibrya
SWP Power and Risk Office
Senior HEP** Utility Engineer

Hong Lin
North Central Region Office
Senior Engineer

Hue Ly
Operations and Maintenance
Electrical Engineer

Tuan Ly
Technology Services
Systems Software Specialist II

Tricia Machado
Human Resources Office
Personnel Specialist

Daniel Mardock
Engineering
Supervising Land Surveyor

Monica Markel
Technology Services
Research Program Specialist II

Nicholas Miskovich
Human Resources Office
Personnel Specialist

Jacqueline Nelson
Business Services Office
Associate Governmental Program Analyst

Tina Nguyen
Fiscal Services
Accounting Administrator I

**Hydroelectric Power

New Hires

William O'Daly
SIWM***
Research Writer

Lynn O'Leary
Flood Management
Engineer

Juwon Pate
Engineering
Mechanical Engineer

Alisa Pierce
Business Services Office
Office Technician (Typing)

Bryan Richter
Technology Services
Senior Program Analyst

Julie Ryce
Technology Services
Systems Software Specialist II

Anil Satyal
Operations and Maintenance
Electrical Engineer

Sherida Schouweiler
Executive
Office Technician (Typing)

William Schroeder
Environmental Services
Staff Program Analyst

Paul Shipman
IRWM***
Engineer

Wendy Slepian
Flood Management
Associate Governmental Program Analyst

Robert Smith
Technology Services
Staff Programmer Analyst

David Somers
Executive
Staff Services Analyst

Deena Terao
Executive
Associate Governmental Program Analyst

Curt Thue
Technology Services
Senior Programmer Analyst

Pamela Tokunaga
Human Resources Office
Personnel Specialist

Eric Tsai
Flood Management
Engineer

Joshua Urias
Environmental Services
Engineer

Jose Valdez
San Joaquin Field Division
Utility Craftsworker

Gerald Weiss
Fiscal Services
Associate Governmental Program Analyst

Brendan Williams
Engineering
Transportation Surveyor

Melinda Williams
Executive
Attorney III

David Woodbridge
San Luis Field Division
Utility Craftsworker

Gina Zayas
Environmental Services
Data Processing Manager II

Retirements

David Bogener
Northern Region Office
Environmental Program. Mgr. I (Supv.)

David Bradley
Engineering
Transportation Surveyor

Karen Buckner
Executive
Executive Assistant

Meihuei Chang
Technology Services
Staff Information System Analyst

Gary Garcia
San Luis Field Division
Chief HEP* Operator

Gordon Haley
Operations and Maintenance
Heavy Equipment Mechanic

Eileen Hoyt
Business Services Office
Senior Information Systems Analyst (Supv.)

Roland Johnson
Engineering
Construction Supv. I

Debra Kastner
Southern Field Division
Staff Services Manager II (Supv.)

Victoria Kataoka
Technology Services
Associate Governmental Program Analyst

Richard Le
SIWM***
Research Program Spec. I

Colleen Lovejoy Haerr
FESSRO*****
Engineer

Danny Macias
Oroville Field Division
Utility Craftsworker

Lori Mathis
Operations and Maintenance
Senior HEP** Utility Engineer

Kathryn 'Katie" Chaney

Katie Chaney has created a pretty good recipe for the next phase of her life.

After devoting 26 years of State service to monitoing professional exams and emergency repair projects and funding, Katie Chaney, a DWR Associate Governmental Program Analyst, is embarking on her new career as a full-time caterer.

In 1987, Katie began her State career with the Department of Consumer Affairs in the Board for Professional Engineers and Land Surveyors before joining DWR's Floodplain Management Branch in 2010.

"One of the major projects I worked on at Consumer Affairs was assisting with the development of the applicant tracking system for engineers and land surveyors exams," she recalls. "That system is still used today."

At DWR, Katie has monitored and reported on work completed by the State and federal emergency managment agencies using proposition and general fund monies. "Basically, I tracked, monitored and reported how project money was expended," said Katie. "Various funding sources support projects, like National Flood Insurance, Risk Notification and Community Rating Systems within the Floodplain Management Branch."

"Cooking and catering for people have been a passion of mine for many years, one that I'm now able to bring to life," said Katie. "I'm so excited to be young enough to enjoy something that I love so much!"

Katie says she feels extremely enthusiastic as she plans life as a full-time caterer specializing in weddings and large banquet events in El Dorado County and surrounding areas.

"I guess I have to attribute that to my Italian grandmother," said Katie, who was born in Minnesota. "Her house always smelled so wonderful and people were always very happy there. It all revolved around the kitchen, and I loved that feel and wanted to be able to do the same."

She'll also keep busy with Dovetail Ministries, the non-profit organization she founded to help the less fortunate in her community, Katie also plans to continue working with the Placerville Community Resource Center to help the at-risk and homeless.

Margery Nagel
Fiscal Services
Associate Administrative Analyst

Dennis Noyce
San Joaquin Field Division
HEP* Mechanic II

James Pearson
Business Services Office
Senior Inspector of Auto Equipment

Warren Spirling
Operations and Maintenance
Senior Delineator

Linda Sprecher
SIWM***
Associate Governmental Program Analyst

James Stephenson
San Luis Field Division
HEP* Electrician II

* Hydroelectric Plant *** Integrated Regional Water Management **** Statewide Integrated Water Management

Dale Hoffman-Floerke

Someone retires and the first thing people want to know is: What's changed the most since you started? What were your biggest accomplishments? What's been the biggest challenge? What advice can you give others? What's next in your life?

Dale Hoffman-Floerke, who retired as DWR's Chief Deputy Director, has been fielding questions like that. Here are some of her answers:

"I entered the department (in the 1970s) when environmental activities were barely a blip on the radar screen. There were many opportunities to help the department develop its environmental ethic from the ground up. I was fortunate to be a major player in that process, along with others.

"Over the past three years we developed the department's Sustainability Policy as well as the Environmental Stewardship Policy. It was a collaborative effort that involved hundreds of meetings among our diverse staff—scientists, attorneys, planners, engineers and other fields.

About lessons learned with the passage of time: "Many aspects of climate change have really changed our thinking about how we do our forecasting. Historical records are not as reliable as they once were in flood forecasting and water supply projections. We must now evaluate impacts from sea level rise as well as loss of snow pack and less ability to capture water. It's changing the way we do many things in the department."

Being a visible leader on major issues like Bay Delta Conservation Plan (BDCP) has had its moments, Dale says.

"It's hard, because you have to be cautious about what you say and how you say it. The bigger picture is lost on some people who mistakenly believe BDCP will solve all of the state's water issues, but it's only one component of a statewide water management program. BDCP is designed to restore the Delta ecosystem and ensure water supply reliability for all of California. There are still some territorial views out there, but we're not going to see the alleged 'water grab' that concerns many BDCP foes."

Does she have career advice for the youngest generation of DWR employees?

"It's important for people starting out to be engaged in everything that interests them. One key attribute of a leader is being able to grasp a variety of opportunities and activities. Be as flexible as you can and be sure you're listening to all sides, and don't dismiss some ideas because they seem silly. Being a willing problem solver is important. Put your best foot forward and be sincere in solving issues without being confrontational.

"I believe one of my strengths is being able to help identify concerns and issues from all sides and bring each camp closer together on resolution of those issues. In the end, they each may not totally agree but can live with the outcome."

Dale says she and husband Rob intend to travel a lot. They went to New England only two weeks into her retirement to see the fall colors, and they'll be rafting the Colorado River this summer. Rob's photography skills surely will be put to good use.

Madagascar is at the top of Dale's bucket list for its vast biological diversity. Cuba seems to be calling, too, and might be a destination in the fall. "Cuba has always fascinated me," she says, "and due to restrictions that limit travel to humanitarian and educational work, it's pretty unspoiled for the most part."

No longer living a 24/7 job, Dale says she may even have time for social media. "I do nothing on Facebook," she says. "My husband set up my account. I'm only a looker and have never posted anything, but with a lot more free time, I may be open to doing a bit more."

That being the case, DWR's Facebook community shouldn't be surprised to receive a Friend Request one of these days from someone who lists "California water policy" among her interests.

Attention DWR Retirees:

If you are interested in joining DWR's Alumni Club, contact:
Richard Jones, DWR Alumni Club
(916) 212-3515 or email **rdcjones@earthlink.net**

Promotions

Alvin Abaya
Technology Services
Systems Software Specialist II

Gregg Ahlers
Oroville Field Division
Utility Craftsworker Supv.

Jessica Alarcon
Flood Management
Staff Services Manager I

Mohamad Alemi
SIWM***
Principal Engineer

Firas Araj
Operations and Maintenance
Associate HEP** Utility Engineer

Joanne Arcilla
Operations and Maintenance
Staff Services Manager I

Eli Ateljevich
Bay-Delta Office
Senior Engineer

Musa Aziz
Engineering
Associate HEP** Utility Engineer

Jason Bacher
Engineering
Associate Governmental Program Analyst

Rachel Ballanti
Executive
Staff Services Manager I

Jessica Barnes
Environmental Services
Senior Environmental Scientist

Ofelia Bogdan
Environmental Services
Staff Services Analyst

David Bosworth
Environmental Services
Senior Environmental Scientist

Ronald Brault
Oroville Field Division
HEP* Mechanic Supv.

Micheal Brault
San Joaquin Field Division
HEP* Mechanic Supv.

Peter Brostrom
SIWM***
Land & Water Use Program Manager I

Lidia Bryant
State Water Project Analysis Office
Research Analyst II

John Bunce
Southern Field Division
Principal HEP** Utility Engineer

*Hydroelectric Plant
**Hydroelectric Power
***Statewide Integrated Water Management

Rod Mayer

When Rod Mayer started with DWR in 1976 as a 19-year-old student engineer, he didn't imagine that 21 years later he would be leading flood-fighting efforts nearly around-the-clock for two weeks in January 1997—from West Sacramento to Tisdale Bypass to Meridian to Lathrop. He also didn't imagine he'd be catnapping in the cab of his truck in the wee hours of the morning on the same Sutter Bypass levee where National Guard troops were hustling to place explosives in order to blow a "relief cut" through the levee.

The "Great Flood of 1997," one of the biggest on record in the Central Valley, is one of the highlights of his career because it was "so intense, so big." Unfortunately for Rod, the State's response to the flood wasn't over after two weeks of adrenalin-driven flood fighting. There was also a full year of recovery that included long hours, weekends and holidays working with the U.S. Army Corps of Engineers to repair 550 damage sites– perhaps it's no surprise Rod worked nearly an extra thousand hours that year.

While many people might think that having a key leadership role in the massive flood fight of 1997 would be the highlight of someone's career, Rod also considers leading the teams that developed the Urban Levee Design Criteria (ULDC) and the Draft Urban Level of Flood Protection Criteria (ULOP) documents among his most significant accomplishments.

The ULDC provides the technical criteria urban areas use to determine if their levees meet a 200-year level of flood protection. The ULOP is the procedural criteria for making a finding of a 200-year level of protection. According to Rod, the ULDC/ULOP are unique and set a new standard for the nation—offering other states a model they can consider for their urban areas.

"We wanted the procedures to be dependable," said Rod. "This way when a city or a county makes a finding that they meet the urban level of flood protection, you could feel pretty comfortable that they actually do."

Rod considers "projects that will have long-term flood protection benefits for the people of California" some of the most important work he's done. Rod provided leadership in communicating flood risk, helping author the 2005 white paper, "Flood Warnings: Responding to California's Flood Crisis" and writing the initial draft of Proposition 1E. As a core member of the FloodSAFE California Initiative team, Rod provided key support for the 2007 flood legislation package and was instrumental in creating the Federal Advocacy Program to improve federal crediting and increase federal funding for flood protection in California.

In 2009, the Department of the Army awarded Rod the Commander's Award for Public Service for "Distinguished Service as a Member of the National Committee on Levee Safety." In 2010, he received a meritorious service award from the California Floodplain Management Association for his

work on the National Committee on Levee Safety. He has also received several management excellence awards from DWR.

Although primarily known as a "flood guy" after serving five years as Chief Engineer for The Reclamation Board (now the Central Valley Flood Protection Board), 16 years in the Division of Flood Management and as FloodSAFE Executive, Rod also worked for the divisions of Safety of Dams, Planning and Operations and Maintenance.

After more than two decades in flood management, Rod believes the greatest challenge remains funding instability—the "up cycles" and "down cycles" of available resources. Despite flooding being one of the deadliest and most expensive types of natural disasters, Rod notes: "The memory of floods is short. It's easy to forget them if it hasn't flooded in a few years or if you're in a drought."

A native of San Francisco, Rod earned both his Bachelor's and Master's degrees in Civil Engineering from Sacramento State University.

Rod is looking forward to being a part-time consultant, spending time with family, bringing his golf handicap even lower, hiking, tennis, mountain climbing, skiing, catching up on home improvement projects, traveling (Australia, New Zealand, Europe and Canada are all on Rod's bucket list) and returning to motorcycle riding.

Although known as an extremely hard worker, Rod is a firm believer in the motto that "You just can't have too much fun!"

Brian Bustos
Business Services Office
Associate Governmental Program Analyst

Deanna Butler
Oroville Field Division
Administrative Officer II

Alex Caputo
Fiscal Services
Accounting Officer

Michael Cardoza
San Luis Field Division
HEP* Operations Superintendent

Kenneth Carroll
San Joaquin Field Division
Supervising HEP** Utility Engineer

Samantha Cherry
Human Resources Office
Associate Personnel Analyst

Seema Chowdhury
Engineering
Junior Engineering Technician

Greg Clawson
State Water Project Analysis Office
Associate HEP** Utility Engineer

Teresa Connor
Northern Region Office
Supervising Engineer

Harry Curlett Jr.
Technology Services
Systems Software Specialist III

Promotions

Peter Czerkies
Business Services Office
Associate Governmental Program Analyst

Jeremy Del Cid
Environmental Services
Environmental Scientist

Sara Denzler
FESSRO****
Program. Manager II

Andrew Devalk
Southern Field Division
Water Resources Technician I

Geeta Devi
Fiscal Services
Accounting Officer

Devinder Dhillon
SIWM***
Engineer

Gregory Dixon
Southern Field Division
Water Resources Technician I

Michael Donlon
Executive
C.E.A.

Luis Enriquez
Operations and Maintenance
Associate HEP** Utility Engineer

Michael Evenson
San Joaquin Field Division
HEP* Mechanic II

Frank Farmer
Technology Services
Systems Software Specialist III

Joel Ferrera
Oroville Field Division
HEP* Mechanic II

Sergio Fierro
Southern Region Office
Senior Land and Water Use Scientist

Todd Fisher
Technology Services
Systems Software Specialist I

Laura Flournoy
Environmental Services
Program Manager I

Corey Fong
SWP Power and Risk Office
Electrical Engineer

Eugene Garrett
San Joaquin Field Division
Senior HEP* Operator

Joaquin Garza
North Central Region Office
Junior Engineering Technician

Christian Gonzales
Operations and Maintenance
Associate Control Engineer

Jasmine Guerrero
Business Services Office
Associate Governmental Program Analyst

Mark Hafner
Oroville Field Division
Senior HEP** Utility Engineer (Supv.)

Kristine Heller
Business Services Office
Business Service Officer I

Gina House
Oroville Field Division
HEP* Operations Supt.

Michael Howell
San Joaquin Field Division
Utility Craftsworker Supv.

Randolph Hszieh
SWP Power and Risk Office
Senior HEP** Utility Engineer Supv.

Maggie Hunnicutt
Executive
Associate Governmental Program Analyst

Farida Islam
Environmental Services.
Senior Environmental Scientist

*Hydroelectric Plant **Hydroelectric Power ***Statewide Integrated Water Management
**** FLOODSAFE Environmental Stewardship and Statewide Resources Office

Promotions

Xaviera Isler
Engineering
Associate Governmental Program Analyst

Victor Jimenez
Technology Services
Systems Software Specialist III (Supv.)

Zachary Jojola
Flood Management
Engineer

Gardner Jones
Environmental Services
Senior Environmental Scientist

Albert Kopp
San Joaquin Field Division
HEP* Mechanic I

Richard Kranz
SWP Power and Risk Office
Associate HEP** Utility Engineer

Jeanne Kuttel
Engineering
C.E.A.

Susan Larsen
Executive
Administrative Officer II

David Le
Fiscal Services
Associate Budget Analyst

Jennifer Leavitt
Business Services Office
Associate Management Analyst

Lydia Ledesma
Human Resources Office
Personnel Specialist

Lani Lee
Fiscal Services
Accounting Administrator I

John Lee
Operations and Maintenance
Water & Power Dispatcher

Timothy Lindquester
Business Services Office
Staff Services Analyst

James Long
FESSRO****
Senior Environmental Scientist

Mahmoud Mabrouk
State Water Project Analysis Office
Senior Engineer

Ryan Mactarnaghan
Operations and Maintenance
Senior HEP** Utility Engineer (Supv.)

Christopher Martin
Executive
Attorney III

Jacob Martinez
San Luis Field Division
Water Resources Technician I

Elizabeth Martinez
Southern Field Division
Water Resources Technician I

Dana Martinez
Southern Field Division
Staff Services Manager II (Supv.)

John Marty
Business Services Office
Associate Business Management Analyst

Charlotte Micallef
Operations and Maintenance
Associate Governmental Program Analyst

Timothy Milliron
Engineering
Construction Management Supv.

Fernando Montalvo
Delta Field Division
Elec.-Mech. Testing Technician III

Nathan Nelson
Business Services Office
Staff Services Manager I

Steve Nelson
San Luis Field Division
HEP* Electrician II

Theresa Nunez
Fiscal Services
Staff Services Manager I

Michael O'Connor
North Central Region Office
Environmental Scientist

John Oliver
Oroville Field Division
HEP* Electrician I

Raul Pantoja-Ledesma
Delta Field Division
Mechanical Engineer

Todd Percival
North Central Region Office
Water Resources Technician I

Sebastian Perez
Operations and Maintenance
Chief of Utility Operations

Rachel Pisor
Environmental Services
Senior Enviromental Scientist (Supv.)

Parminderjit Randhawa
Operations and Maintenance
Associate HEP** Utility Engineer

Kevin Robinson
Operations and Maintenance
Senior HEP** Utility Engineer

Richard Rodriguez
Delta Field Division
Water Resources Technician II

Jennifer Russo
Public Affairs Office
Associate Governmental Program Analyst

Laurence Sanati
Flood Management
Engineer

John Secrest
San Joaquin Field Division
HEP* Mechanic II

Sheenam Sen
Business Services Office
Associate Governmental Program Analyst

Ashley Sims
South Central Region Office
Office Technician (Typing)

Sukhdev Singh
State Water Project Analysis Office
Associate HEP** Utility Engineer

Mykel Singleton Ii
Delta Field Division
Materials and Stores Specialist

Behzad Soltanzadeh
Operations and Maintenance
Chief of Utility Operations

Randy Somers
San Joaquin Field Division
Utility Craftsworker

Steven Speck
San Luis Field Division
HEP* Maintenance Superintendent

Russell Stein
Executive
C.E.A.

Tompat Stephens
Technology Services
Systems Software Specialist II

Martin Stevenson
Business Services Office
Senior Information System Analyst (Supv.)

Andrew Steward
Oroville Field Division
Associate HEP** Utility Engineer

Darren Suen
Flood Management
Senior Engineer

Eric Sweeting
Environmental Services
Office Technician (Typing)

Daniel Teixeira
Executive
Associate Governmental Program Analyst

Alan-Tung Thach
Technology Services
Systems Software Specialist III

Nakithia Thomas
Fiscal Services
Accounting Officer

Won Trinh
Engineering
Associate Electrical Engineer

Gabino Velazquez
Southern Field Division
HEP* Maintenance Supt.

Kana Venukanthan
SIWM***
Senior Engineer

Patricia Vertrees
Fiscal Services
Accounting Officer

Cindi Vonschoech
Engineering
Associate Governmental Program Analyst

Ellen Walrath
State Water Project Analysis Office
Research Analyst II

Wendy Wang
Flood Management
Engineer

Trina Werly
Operations and Maintenance
Water and Power Dispatcher

Mary White
Executive
Supervising Engineer

Robert Whitlock
Human Resources Office
Staff Services Analyst

Christopher Williams
Flood Management
Senior Engineer

Mike Wilson
San Luis Field Division
Utility Craftsworker

Derek Yagi
Technology Services
Associate Governmental Program Analyst

Amy Young
FESSRO****
Senior Environmental Scientist

David Zachary
San Joaquin Field Division
Utility Craftsworker Supv.

Amy Zuber
North Central Region Office
Environmental Scientist

*Hydroelectric Plant
** Hydroelectric Power
*** Integrated Regional Water Management
**** FLOODSAFE Environmental Stewardship and Statewide Resources Office

In Memoriam

Robert Alan Goodnight, a DWR employee for 23 years, passed away at the age of 55 on August 1.

Bob was a Water Resources Technician II and worked out of the Sutter Field Office for the Division of Integrated Regional Water Management's Northern Region Office (NRO). Before joining NRO, he worked as a Utility Craftsworker for two years and then as a Heavy Equipment Mechanic for nine years at the Oroville Field Division. He was a lifelong resident of Sutter and Yuba counties.

For the past 12 years, Bob maintained 20 of the Department's flood and other surface water stream gages, and according to Bob's supervisor Shawn Pike, Bob was virtually indispensible to the operation and maintenance of those critical instruments.

Shawn said, "I tried to tell him once, 'Hey, you can't get it all done, Bob, and sometimes things break.' His answer was, 'Yeah, I know, I just can't be in two or three places at once . . . Well, maybe I can if I do it this way . . . '

"Bob was like a duck in a pond," Shawn said. "He looked perfectly calm, but underneath the surface, his legs were going like crazy."

In addition to his measurements, Shawn says, Bob checked, corrected and certified all the data, which are used by several DWR offices, all the environmental agencies, water districts and countless consultants.

Earlier this year, Bob told Shawn he was taking time off to reduce his leave balance. "My plan is to evaluate lake levels, perform population surveys, investigate feeding patterns and perform taste tests of the trout in Eagle Lake," he said.

Bob is survived by Audrey, his wife of 32 years, as well as his parents, four sisters and a brother. He'll be deeply missed by all.

Leon Mathis Hall who worked on several of the State Water Project's major facilities, passed away on July 15 at the age of 91. He retired as a DWR Senior Engineer in 1985.

Leon was born in Hurricane, Utah, where in childhood he helped on the family ranch, including driving cattle across the state. He joined the Army Air Corps in World War II and flew missions over France, Belgium, Holland and Germany.

After the war, Leon earned an Engineering degree from the University of Utah and was hired by DWR in 1953 as an Assistant Civil Engineer. During the next 30 years, he worked on a wide variety of DWR projects, including Oroville Dam, the California Aqueduct, Mile Post 10 Aqueduct Emergency Repair, Dinosaur Boat Ramp at San Luis Reservoir and the initial Old River Fish Barriers.

Sonny Fong, DWR's Preparedness and Security Manager, says Leon was nicknamed "the Silver Fox" because "he was smarter than anything."

"Mr. Hall was a man of great integrity, compassion, patience and understanding," Sonny says. "His quick wit and funny jokes made a long hot work day go by so much easier."

Leon worked on numerous DWR projects with the Sacramento Project Headquarters Office—Design and Construction (now the Division of Engineering).

"He was highly respected and regarded by staff from within DWR and outside agencies for his knowledge of the Delta/Suisun Marsh and Morrow Island levee distribution systems," said Sonny.

Leon's wife of almost 60 years, Phyllis, survives him, as do three sons, three daughters, a sister and two brothers.

Norman ("Mac") MacGillivray, retired Senior Land and Water Use Analyst, passed away at the age of 86 on June 19.

He was a principal collector of essential water use statistics that, to this day, are used widely by DWR and various water agencies in California and beyond. He also mentored current DWR Director Mark Cowin; State Water Contractors General Manager Terry Erlewine; DWR Chief Deputy Director Dale Hoffman-Floerke and Deputy Director Gary Bardini when they all worked together decades ago in DWR's fertile San Joaquin District.

"Mac made vital contributions to our understanding of agricultural water use and, ultimately, California's efficient use of our precious water resources," says Cowin.

Erlewine adds that Mac was a priceless in-house resource. "He was my go-to reference for anything related to plain water use.

No matter what I'd ask him, he would come up with a scientifically flawless answer in plain English. "

Much of Mac's professional work was done in Bakersfield, out of the limelight, and documented in annual reports that he authored. In 1986, however, he received international recognition for his contributions to monitoring crop water usage when he went to China as part of a distinguished California contingent and gave talks to water officials in Beijing, Xian, Yangling and Chengdu on modern irrigation techniques and water-development programs. Mac was a hit overseas. People there quickly recognized him as a highly competent gatherer and interpreter of water-use data whose numbers could be trusted. They also saw how friendly and interesting Mac was to be with. He was a wonderful ambassador for DWR, the State of California, and the United States.

Mac served in the United States Army during World War II and was stationed in Japan after the bombing of Hiroshima (one of the few chapters of his life he did not like to discuss). After the war ended, he graduated from the University of California, Davis, with a degree in Irrigation Science.

He is survived by his wife of 59 years, Martha, two sons, two daughters, five grandchildren and many devoted friends.

Diane Sanchez, a retired Water Resources Engineering Associate and dedicated employee of Southern Region Office (SRO) for 48 years, passed away on April 18.

As a major contributor to DWR's Watermaster Program, Diane worked in the Watermaster Service Section of DWR's SRO until her retirement in December 2008. She later worked as a retired annuitant until October 2012, and as a volunteer through late March 2013.

Diane received a Department citation for her critical water use efficiency work analyzing claims of water waste in the Imperial Irrigation District under Water Code Section 275. For the Future Water Supply Program in 1984, she studied the ability of groundwater basins in the San Joaquin and San Bernardino Valleys and San Gorgonio Pass to store State Water Project water. She also worked on a study of groundwater occurrence and quality.

A Chemical Engineering graduate of the University of Southern California in 1962, Diane joined DWR as a Junior Civil Engineer after working as an Engineering Student Assistant. Diane contributed to the Department's water quality work, water quality control plans and helped with beneficial use determinations.

Loyal to San Luis

Howard Berman is a man who knows what he likes, and once he's found what he likes, he doesn't stray.

Howard is DWR's only full-time employee at the Romero Visitors Center overlooking San Luis Reservoir near Los Banos in the foothills of the Diablo Range. He's worked there as a host for 37 years, has lived in the same Los Banos house all that time and has been driving the same Volkswagen bug since Valentine's Day in 1970.

Talk about unswerving loyalty to car and career.

Howard's long service with DWR took root permanently at the Romero Center in 1976 after Castaic Lake's Visitor Center was downsized and he became expendable under the "last hired, first to go" rule.

After nearly four decades at Romero Visitors Center, which welcomes an average of more than 150,000 visitors each year, Howard has heard just about every conceivable question and inquiry. "Is this normal? Where's all the water?" is a frequent complaint these days during the current dry spell. The reservoir was near its record low capacity in 2013.

When asked about his most memorable visitors, Howard quickly recalls a visit on Christmas Eve last year. He had planned to close a couple hours early at 3 p.m., but a man walked in before 3 and said his grandson and great-grandkids planned to meet him at Romero in late afternoon after their hike.

Howard said he couldn't close down under those circumstances, so he listened as Norman Gaddis recalled his years of flying airplanes for the U.S. military, from World War II to Korea to Vietnam, where he was shot down and imprisoned in the notorious "Hanoi Hilton" prison camp. Gaddis retired as a brigadier general in 1976.

On another visit, Howard once said something to a boy about the Houston Texans jersey he was wearing. The kid said his dad worked for NASA, if being launched on rockets and circling the earth can be considered "work." Astronaut Rex Walheim went out to his car in the parking lot and returned with a photograph, which he signed and gave to Howard. "You never know who's walking into the building," says Howard.

And you never know when you talk with Howard how many of his stories you're not hearing.

The next time you're driving on I-5 near Los Banos, make the short side trip to San Luis Reservoir and give Howard Berman more than a wave. Give him a story for his collection. He works weekends.

DWR Mission Statement

To manage the water resources of California in cooperation with other agencies, to benefit the State's people, and to protect, restore, and enhance the natural and human environments.

DWR Environmental Scientist Kyle Hartwigsen removes a rotten Chinook salmon carcass from the Feather River on September 16 near Oroville. The Chinook salmon Escapement Survey conducted in the fall by DWR's Division of Environmental Services staff at Oroville helps evaluate the abundance, distribution and timing of the spawning Chinook salmon. From the Fish Barrier dam at the Feather River Hatchery to the Gridley Bridge, the spawning population is calculated from the results of the weekly count of carcasses.